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THE
QUARTERLY JOURNAL
OF
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FEBRUARY, 1925

THE TREND OF ECONOMICS, AS SEEN BY SOME AMERICAN ECONOMISTS[1]

SUMMARY

Knight on the limited scope of scientific method in economics, 156. — Wolfe on functional economics, 159. — Bye's defence of pure science, 161. — Clark's pragmatic views, 161. — Mills on the logic of statistics, 163. — Weld and Mills's canons, 167. — Tugwell on experimental thinking, 168. — Slichter's indictment of the competitive system, 171. — Mitchell's position on the relation of psychology to economics, 173. — The postulates of economics, 179. — Institutional economics, 182.

"It will be said, I suppose," Professor Tugwell observes in his Introduction, "that this book is a sort of manifesto of the younger generation; and in a sense it is that, tho none of us, I think, has meant to put first in his writing the critical attitude."

I suspect, indeed, that the first impression most readers will get from the book is that its authors take a distinctly critical, or even condescending, attitude toward the achievements of the earlier generations of

1. The Trend of Economics, by M. A. Copeland, S. H. Slichter, F. H. Knight, A. B. Wolfe, W. C. Mitchell, P. H. Douglas, R. G. Tugwell, F. C. Mills, W. E. Weld, R. T. Bye, J. M. Clark, R. L. Hale, and George Soule. Edited, with an Introduction, by R. G. Tugwell. New York, Alfred A. Knopf, 1924; pp. xi, 556.

economists. Professor Mitchell finds their discussions "dull" (if taken literally), and their conclusions "dubious." Professor Slichter holds that "Orthodox doctrine is formulated with as little reference to machinery, science applied to industry, corporations, trade unions, the credit system, commercial and investment bankers, as were the theories of Adam Smith." Mr. Soule alludes to "the barrenness of premature senescence which has existed in economic science." Professor Tugwell is quite as severe: "Economics incontestably has got a bad metaphysical odor that only a renaissance of rebuilding from the ground up can dissipate."

But a more careful examination reveals that these extreme views are exceptional. Outside of the chapters contributed by the writers who have just been quoted, there appears to be little disposition to raise the red flag of scientific revolution. All shades of opinion respecting the methods and content of economics are represented. There are radicals, there are conservatives, and there are some who occupy a middle position. I shall find it convenient, in surveying these varied chapters, to follow a path that runs generally, tho not consistently, from the right toward the left.

Professor Knight's chapter on "The Limitations of Scientific Method in Economics" would give distinction to any book. Because I put Professor Knight among the conservatives, it should not be inferred that he undertakes a general defense of prevailing economic doctrines. He is conservative merely in that he insists that the credentials of all projects for the radical reconstruction of economics be submitted to careful scrutiny. He is not willing to follow a new way just because it happens to be the mode. But his attitude appears to be without prejudice. The old methods and

the new have to measure up to the same logical standards. In short, Professor Knight thinks for himself. Moreover, his knowledge of psychology and of the methods of science equips him adequately for his task.

The general run of his argument is somewhat as follows. Science is instrumental, concerned with control, with means rather than ends. It supplies, in effect, an elaborate technique of prediction. Yet it is of small help in many of the practical decisions of life. It fails most notably in the prediction of human behavior and of social changes.

Behaviorism fails, first, because in rejecting consciousness it rejects a *useful* datum. Science itself finds it convenient to retain an element of animism, and science, as a part of intellectual life, is built on intercommunication, which implies the recognition of the consciousnesses of others. Behaviorism fails, second, because the reactions of different persons are not alike. For one thing, no two of them have passed through precisely the same experiences. There is no stable relation, common to all persons, between stimulus and response, and the stimuli themselves are often responses to other stimuli.[2] "The childish doctrine of instincts" is also valueless for prediction. Innate propensities are general, not specific.

In general, in dealing with human behavior, whether consciousness is or is not taken as a datum, it is hard to lay hold of "objectively recognizable features in the situation which are uniformly associated with different possible eventualities." So far as the prediction and control of human behavior is at all possible, it is not by discovering and applying rules. The problem belongs

2. Further, it might be added, the stimulus is likely to be indeterminate, in the sense that different persons (or one person at different times) will not always react to the same *element* in a total situation.

to the field of art, of interpretation and suggestion, not to the field of science.[3]

So also with the study of history and of institutions. History gives judgment and insight, it does not give rules. "The useful knowledge of history is chiefly unconscious knowledge." There are certain fields, Professor Knight admits, where *statistical* laws are possible. But it is difficult to get the facts; the method is applicable only to the "elemental" factors of life, and the behavior even of groups is unstable and unpredictable. Groups as well as individuals "grow in historical isolation."[4]

Is there, then, any room left for a *science* of economics? Professor Knight holds that there is. "In a limited field in economic data, due largely to the fact

3. I suspect that Professor Knight carries his skepticism on this point too far. Certain "principles" of advertising and of "salesmanship" seem to have been developed. But doubtless the largest achievements in either field will always demand a more sensitive and pliant knowledge of human nature than can be formulated in rules. Sir Frederick Pollock said of Machiavelli's influence, "no man ever learned the secret of despotism out of a book." It should be remembered, however, that men's behavior (or, better, their conduct) can be modified by increasing their knowledge as well as by playing upon their weaknesses. Present-day proposals for "controlling human behavior" so as to moderate the cyclical fluctuations of business, rest on the assumption that men will make *rational* use of increased knowledge respecting the outcome of different types of business policies. In a similar way J. S. Mill and other Malthusians proposed to improve the economic status of wage-earners by acquainting them with the relation between the increase of the population and the movement of wages. Neo-Malthusians likewise put their trust in education, but assume, with reason, that knowledge that bears directly upon present personal interests is more likely to be used than knowledge that affects merely the remote interests of a class.

4. Such, it will be remembered, was the ground of Knies's denial of the possibility of "scientific" laws of economic life. I think that Professor Knight does less than justice to the possibilities of the statistical method. Practical difficulties are being surmounted, the range of statistical information is being increased, technique is being perfected. Progress along these lines in the future promises to be more rapid than in the past. Furthermore, statistical groups are generally "isolated" only in part.

that exchange has reduced the factors to definitely measurable quantities, we can have an exact science of the general *form* of relations." In a large sense "economizing" covers about all of rational behavior. But through a division of labor among different sciences, "economic theory has in practice come to be restricted to the analysis of social interaction and coördination through the price mechanism. . . . It can tell us little in the concrete, and its chief function is negative — to offset as far as possible the stupid theorizing of the man in the street. The real sociology and economics must be branches of literature as well as of science."

Professor Wolfe contributes a chapter on "Functional Economics." Under this forbidding title he writes about the place of science in economics and about a number of other things. Professor Wolfe is particularly opposed to the "pure science ideal," that is, that "economics is to be the virgin pursuit of knowledge for its own sake." There are, he holds, two other tenable ideals. First, research, while remaining objective, may be directed to problems that have a practical or ethical interest. Second, research may be "undertaken from ethical motives as well as from intellectual curiosity, and with some fundamental ethical norm or standard in mind." This second alternative is the one Professor Wolfe prefers. Economic research so motivated gives us "functional economics." It is not quite clear why he should worry about economists' motives, for he professes, on certain of his pages, to be an out-and-out determinist.[5]

5. "A scientific psychology must be deterministic. . . . Man's behavior is as mechanical, in the last analysis, as that of any other part of nature." On the other hand, "someone is going to attempt the task of constructing a factually supported theory as a guide to rationally directed social or economic evolution, toward an organization more effectively serviceable to worthy human ends than the one we now have." Surely this is riding two horses at once.

Be that as it may, it is clear that the winds of pragmatism and instrumentalism have passed him by. "Pure science" is a logical fiction, altho it is reputed to have been pursued at the Academy of Laputa. Knowledge not related to some human interest is not knowledge. Never does an investigator seek merely what he may find, but always an answer to a question. Applied science differs from what is called pure science only in its lesser degree of generality, in the immediacy and particularity of its problems. It is a commonplace that in the history of the physical sciences the most fruitful and, in a sense, the most "practical" researches have been those which have been relatively free from the hampering specifications which immediate and particular problems impose. In economics as in economic life it is likewise true that roundabout methods have often proved to be the most productive.

The proper placing of ethics in its relation to economic inquiries is a matter of technique, not of principle. An economic inquiry may be colored and shaped by an ethical interest, even when the inquiry is kept free of formal ethical postulates.[6] Economics may be made to deal only with "what is," as distinct from "what ought to be"; and yet the particular report it makes, the precise aspects of "what is" to which it attends, may be determined by an interest in "what ought to be." But economics would lose rather than gain by an alliance with formal or "scientific" ethics. Professor Wolfe's "functional welfare economics" is to have as one of its fundamentals "a generally accepted, psychologically grounded, norm of welfare." This requirement is a heavy handicap. In fact, it puts "functional economics" pretty definitely out of the running.

6. This, I suppose, is substantially what Professor Wolfe has in mind as the second of the three possible ideals of economic science.

Professor Bye, who writes of "Some Recent Developments of Economic Theory," defends the position which Professor Wolfe attacks. He repeats the old arguments for "pure science," for a "purely descriptive economics," and for its sharp separation from "applied economics." "Knowledge for knowledge's sake, without any intruding ideas about welfare, is the surest way toward the ultimate promotion of economic well-being." This position, I should say, involves a confusion. Science may perhaps be unbiased. But science can never be concerned with "pure description," for the reason that description is never "pure." Scientific as well as aesthetic description requires selection and valuation. Even bias, I suspect, is not without its uses, if only as an energizer, a catalytic agent.

The general significance and the present status of the theory of value and distribution are the topics around which Professor Bye's discussion centers. If he says little that is new, he says much that is judicious. And if he fails to dig very deep, it is because he is excavating in the shallow débris of the dialectical controversies with which, during the past thirty years, too many American theorists have occupied themselves. I get the impression that, if he were to deal with substantive problems, involving more than merely verbal issues, Professor Bye could do work of a high order.

Professor Clark has never done better work, I think, than in the first two sections of his paper on "The Socializing of Theoretical Economics." In them there is a rare combination of felicitous expression and analytical finesse. Professor Clark's conclusions are in some respects different from those of Professor Knight. But their contributions to this volume have one thing in common. They show that both authors have given

serious attention to modern developments of logical theory, and have woven some of those developments into their own thinking.

Professor Clark's general view of economics is pragmatic. But he does not hold that the problems of economics are merely problems of "economic efficiency." Ethics might conceivably be ruled out, the notion of efficiency be kept distinct from any avowed notion of what is good, but only at the cost of introducing bias by including or emphasizing certain values rather than others.

Selection appears not only in the choosing of problems, but in picking the ways and means of attacking them. The materials and methods that satisfy the canons of scientific adequacy impose their own limitations upon us. "Yet," Professor Clark judiciously observes, "it is probably impossible to invent a system of logic so tautologically sterile, or a behaviorism so aridly descriptive, as wholly to prevent the human mind from getting at the inner significance of facts." But if economic science is to make real progress, he contends, deduction and induction must be consciously used, so that each shall give significance and meaning to the other.

Economic theorems that are universally true are mere truisms, tautologies. For example, "We are told that price is fixed at the point where supply and demand become equal." But, "It is only as common sense or induction adds descriptions of the behavior of 'supply' and 'demand' that the proposition has meaning attached to it, by a sort of associative process, and becomes a vehicle or symbol of truths which its literal formulation does not categorically denote."

In determining selection and emphasis, Professor Clark suggests, time and place are of primary impor-

tance. A proposition about the existing economic order necessarily hinges upon the character of the substitutes for that order which are "within the bounds of serious possibility." Further, "it is probably true that economic conceptions have mostly been framed with reference to particular errors or evils which they might seem to combat." Smith's economics was *directed* against mercantilism. The theory of marginal productivity was an answer both to Marx and to "wage-fund extremists."

Thus far I can follow Professor Clark with confidence and with grateful approval. But I cannot follow him in his next step, in which those partial aspects of truth which are marshalled for practical or even for militant purposes are made to play the rôles of opposites, in a kind of Hegelian dialectic. Competing economic theorems are generally complementary, sometimes overlapping, but never (unless there is positive error on one side or the other) opposites.

Professor Clark's experiments in non-Euclidean economics are undeniably clever, but they do not convince me. He examines eight "eminently respectable propositions," and manipulates them by processes which he lumps together under the name of "inversion" but which are really of several different types. Some of his theorems, in fact, are not "economic" propositions.

Two writers, Professor Mills and Professor Weld, deal with the possibilities of inductive methods. Professor Mills's paper "On Measurement in Economics" is a workmanlike and finished production. He has read wisely and considered carefully. Nevertheless, I believe, some of his principal conclusions are untenable. That he should have made some slips is not surprising, for he traverses ground where the footing is treacherous.

The present status of the logic of statistics is admittedly unsatisfactory, and there is room for differences of opinion on fundamental matters.

Professor Mills starts with certain considerations suggested by Merz's chapter[7] on "The Statistical View of Nature," and by Josiah Royce's notable paper on "The Mechanical, the Historical, and the Statistical."[8] He is led to generalize respecting the "statistical character of useful knowledge." The difficulty with "the mechanical conception," Professor Mills holds, is that it "involves the notion of sameness, of the precise identity of all the things or events described by a given law." This is a rash generalization.[9] But taking it as

7. J. T. Merz, A History of European Thought in the Nineteenth Century, vol. ii, ch. xii.

8. Science, new series, vol. xxxix, p. 551. "The object of statistical knowledge is not the single [historical] event and is not the invariant [mechanical] law, but is the relatively uniform behavior of some average constitution, belonging to an aggregate of things and events, and the probability that this average behavior will remain, within limits, approximately, altho always imperfectly uniform." The statistical view, Royce held, is not a mere makeshift substitute for the mechanical view. He argued that since verification is always inexact, an approximate theory is better than an exact one. "There is good reason to say that the statistical force is the canonical form of scientific theory." Of course this is nothing more than interesting conjecture. The difficulty is that statistical knowledge, for aught we know to the contrary, might be resolved into the mechanical form, while important types of mechanical knowledge appear to resist statistical formulation. This particular range of problems has never been more ably discussed than by Cournot, especially in his Essai sur les Fondements de nos Connaissances, altho his conclusion that the world itself, like our knowledge of it, is both mechanical and statistical, has never gained a following. Cournot's distinction between historical and scientific knowledge was essentially like the one drawn by a number of modern logicians, notably H. Rickert. Royce's view was less fully developed. Professor Mills, it may be observed, follows Maxwell rather than Royce when he asserts that "mechanical laws assume the historical type of knowledge." He appears to mean that mechanical knowledge assumes *complete* induction—surely not a tenable position.

9. What the mechanical view really assumes is that the *relations* of *quantitative* aspects of things are stable, in the sense that their variations may be described by mathematical functions. There are, of course, other necessary assumptions, but only such, I believe, as are equally required by the statistical view.

it is, what of it? Neither the physical scientist, *qua* scientist, nor the economist, *qua* economist, is concerned with the ultimate constitution of knowledge. The practical problem is one of getting useful and reliable ways of formulating and organizing knowledge. Will anyone maintain that the *necessary* assumptions of non-statistical physical science fail to get abundant justification from its achievements? [1]

So too with the concept of *law*. "A law as the scientist sees it," observes Professor Mills, "does not govern." No, but the notion that it does govern served a very useful purpose in its day. Professor Mills follows Marshall (and J. S. Mill) in holding that an economic law is a statement of a "tendency." [2] Now the notion of a "tendency" in phenomena is quite as animistic as the notion that "law governs." But I should not reject it on that account. It is a convenient way of indicating with a minimum of circumlocution that a law is a general statement that has prediction value.

I cannot, however, follow Professor Mills in holding, with Royce, that "tendency is an essentially statistical term," "a statement of average relations." That a projectile tends to follow a path defined by a curve fitted by least squares to the observed paths of different sorts of projectiles, selected at random and discharged under haphazard conditions, is not a useful statement.

1. Professor Mills urges that the data of economics are more uncertain than those of the physical sciences. But this puts additional difficulties in the way of the empirical as well as of the rational formulation of tendencies.

2. Incidentally, I do not understand just why Professor Mills holds that of the two graphs he prints (on pages 52 and 53) one illustrates physical and the other economic "law." Both show relationships of physical variables. In a rigid sense both are illustrations of diminishing returns. The only difference I have been able to discover is that the second "law" has *more* economic significance than the other, and that in its case the observed facts are not summarized so well by a smooth curve.

That a projectile tends to follow a path determined by accurate observations of the behavior of similar projectiles, discharged under generally similar conditions is, on the other hand, a useful statement which serves as a practical rule in gunnery. That a projectile tends to follow a path defined by a parabola is also a practically useful statement.

That the prices of agricultural products tend to increase as population grows is, under present conditions, a rational (mechanical) rather than an empirical statement. It is in no proper sense an "average." That wages tend to lag behind advancing prices is, let us say, an inference based in large part upon an induction, but it is vastly more than an "average." A statement of historical fact is not a statement of tendency. *An average, as well as a single event, may be unique.*[3]

In the field of mechanics, which Professor Mills cites by way of analogy, the real cleavage is not between rational mechanics and statistical mechanics, but between rational mechanics and empirical mechanics.[4] But rational mechanics is merely a way of organizing

3. The larger the purely "statistical" element, the more, that is, an average enters into a process purely *as* a statistical average, rather than as a device for adjusting observations of a fixed but unknown magnitude, the greater is the uncertainty of prediction. This distinction is not merely verbal. To say that a statistical inquiry can be brought under the general theory of errors of observation is to say, in effect, that it supplements (and is supplemented by) a large body of relevant experience, organized in rational or mechanical form. The same principles are involved, altho somewhat more loosely, in our habit of approving statistical findings that appear to be "reasonable." In practice it is generally some such joining of statistical and rational considerations that makes it possible to get workable results out of what appear on the surface to be weak or meaningless a posteriori probabilities. Urn schemata are inadequate representations of the universe of experience, organized and unorganized, within which the statistician works.

4. The kinetic theory of gases, as developed by Maxwell, Boltzman, and Gibbs, is the canonical example of "statistical" mechanics. The method is a priori, not empirical, and serves as a means of *explaining* experience, not of summarizing or describing it. Conceivably, making reasonable suppositions with respect to the position and movement of each molecule, the whole mechanism could be explained by a system of

experience, while empirical mechanics is fairly sure to be rationalized whenever that process is economical. Experience and theory go hand in hand, or rather, by their aid science climbs upward hand *over* hand. In economics, likewise, inductive findings will give accuracy and concrete meaning to the theorems of rational [5] economics, while theory will continue to analyze, interpret, relate, and support the results of inductive studies and of such other new experience as comes to its hand. Professor Mills, it is proper to say, really grants as much. But the tone and emphasis of his thoughtful study are otherwise. The growing use of quantitative methods is the most promising development in contemporary economics. But it will prove relatively sterile if it does not lead to a renaissance of theory.

Professor Weld's chapter on "Regional Comparison and Economic Progress" does not call for extended comment. It is an unsatisfactory piece of work. The younger economists, unlike their teachers, Professor Weld tells

equations. Millions of equations would be necessary, so that approach is cut off. But the number of molecules is so large, that it *makes no practical difference* whether they be considered as bound by law or free. In either case the fundamental assumptions are Newtonian. Gibbs himself never suggested that his formulas gave a clue to the nature of knowledge. He was content that they gave results that "coincide sensibly with the general laws of thermodynamics." Similarly the theorem that entropy (useless energy — playing a part in mechanics curiously like that of utility in some systems of economics) tends toward a maximum, may be formulated as a statement of a tendency toward change from a less probable to a more probable state. Here again statistical mechanics affords merely an alternative *form* of explanation. It gives no hint reputing the nature of reality or even of the constitution of the data of experience. (For a good elementary account of these matters see Emile Borel, Le Hasard, chs. vi and x.) On the opposite margin of the science of mechanics, remote from these bold generalizations, we find empirical formulas, "statistical" in the sense that they involve averages, which have not been reduced to rational rules. Here again economy is the controlling consideration. The "uncertainty" of statistical mechanics is not the uncertainty of empirical formulas. Royce confused two different things.

5. I trust that it is still possible to use this adjective with a logical rather than a psychological implication.

us, are interested in welfare. To this end "we must learn of causes or else shut up shop." Knowledge of causes may be derived from regional comparisons, so as to "make it more possible for backward nations to be brought into better alignment with modern progress." Professor Weld suggests how it might be done. The obvious comment is that one concrete achievement in this field of research, no matter how small, is worth any amount of schematizing.

Professor Weld's scheme, after all, is merely that the researches he proposes should be guided by Mill's canons of experimental inquiry. It is surprising that Professor Weld should have failed to note Mill's emphasis upon the difference between sciences of mere observation and sciences of experimentation. It is even more surprising that he should not have noted that Mill devoted a chapter to the task of showing that his canons of experimental research could not safely be used in regional economic comparisons.[6]

The title of Professor Tugwell's paper, "Experimental Economics," suggests that he too is writing of inductive methods. It suggests also that he too confounds induction and experimentation. Happily, the paper belies its title. One's judgment of its quality must depend largely upon the type (as distinct from the severity) of the standards by which one rates it.

6. Mill undoubtedly went too far in his skepticism. In the eighth edition of his Logic he appended to his general discussion of plural causes (Book iii, ch. x) a note which begins as follows: "It is justly remarked by Professor Bain, that though the Methods of Agreement and Difference are not applicable to these cases, they are not wholly inaccessible to the Method of Concomitant Variations." But he made no change in his chapter on the use of inductive methods in the social sciences (Book vi, ch. vii). Not only did Mill write when statistical technique was relatively undeveloped, but it is clear that he had particularly in mind a special problem (the effects different commercial policies have on national prosperity) where the nations that might be compared are few and the effects to be detected ill-defined and relatively slight.

It is plentifully besprinkled with the various tags of "modernism." Dogmatic opinions are thrown around recklessly. There is no evidence of any effort to achieve logical consistency.[7] Yet what Professor Tugwell has to say is not to be dismissed lightly. Impressionistic as it is, his paper has a distinctly interesting intellectual background. It has also a certain eager and buoyant quality. And it is better to throw logic to the winds than mess around with it blunderingly. To adapt a phrase from Professor Knight, the field of economic criticism has room for literature as well as for logic.

A paper made up of appreciations (and depreciations), with aesthetic rather than logical unity, cannot be summarized in a few paragraphs. But the picture Professor Tugwell paints is, in outline, one of a world confronted by momentous new problems, handicapped by an economics that is rigid and inflexible because the notion of natural law permeates it through and through. "Economic laws (as now formulated) are not natural laws just because they are not useful in the sense that natural laws are useful." [8] We need, therefore, a more flexible, experimental, approach to economic problems. Not only what cannot be but what might be should engage our active interests. We need, in effect, a larger use of the planning and creative imagination. But along with that we need to verify and reject. Social

7. I select only one example. Professor Tugwell holds that economics has suffered because its development has largely been at the hands of teachers whose task is "to communicate to students the accumulations of scientific knowledge that society has been able to build up." Unfortunately for this generalization certain important exceptions would occur to any one. So, according to Professor Tugwell, Ricardo, Marx, and the Mills, altho "they had no formal University connections, were nevertheless pedagogues." From which I infer only that Professor Tugwell does not like their doctrines.

8. Professor Tugwell cites the law of diminishing returns. Does he mean that the "experimental" economist could safely disregard that law? If it cannot safely be disregarded it is, for that reason, useful. Or does he merely mean that it does not bear upon problems in which he happens to be interested?

experimentation is costly. "If we can somehow simulate experience as the chemist simulates in his laboratory, we shall have made a big advance in social method." [9]

I should accept this in part, not so much as an account of what we ought to do, but as a fairly accurate account of the actual processes of constructive thought. But I do not like Professor Tugwell's implications that experimental thinking affords in some way a *new* opportunity for economists, that past generations of economists had minds that were differently constructed, and that the notion of economic law has always been the peculiar property of the standpatter, never of the man who looks forward.[1] While he grants freedom of experimental thinking to himself and to his contemporaries, he assumes that the older economists were bound fast by tradition, by a superstitious faith in economic law, and even by the play of economic determinism.[2] I do

9. The chemist does not "simulate" experience; he creates it. And whether in our own thinking we *can* "somehow simulate experience" is an idle question; for somehow we do. Professor Tugwell quotes John Dewey on "the place of active and planning thought within the very processes of experience," but seems not to have caught the full bearing of the words. For an illuminating statement of what I take to be the sound core of Professor Tugwell's thesis see William James, Some Problems of Philosophy, p. 222.

1. I shall not name American economists. But I wish that Professor Tugwell and those who hold with him would read and reflect upon Mill's autobiography and J. M. Keynes's memoir on Alfred Marshall. Presumably Professor Tugwell, like Professor Mitchell, finds Mill and Marshall dull. But surely it requires only a modicum of sympathetic intelligence to allow for the inevitable shifting of interests that comes as new problems emerge and as some of the old ones, perhaps, approach a final solution.

2. Thus, "Professor J. M. Clark's whole approach to the field of economic theory has been ethical." But, "Adam Smith's connection with the commercial life of Glasgow bore directly upon his conception of national welfare." Professor Fisher and Professor Mitchell are interested in cures for the evils of the business cycle and of unstable prices, and their theories, therefore, are "ethically oriented." Ricardo had similar interests. But presumably these, like certain of his theories which Professor Tugwell mentions, were "directly influenced by the fact that he was a city man and a stockbroker."

not see how one who looks backward through smoked glasses can look forward with open and clear eyes.

Professor Slichter is quite as dissatisfied with the present status of economic theory as Professor Tugwell is, and the problems with which he thinks theory should occupy itself are like some that Professor Tugwell recommends. But otherwise their papers are radically different. Professor Slichter brings to his discussion of "The Organization and Control of Economic Activity" an extraordinarily concrete and particularizing turn of mind. He is impatient of broad generalizations. His interest is in pointing to the looseness with which such generalizations fit the facts of experience.[3] But this implies, of course, another generalization, negative in form. Thus his principal thesis is that competition is *not* effective as a regulator of economic activity. More specifically, "an interest on the part of individual buyers and sellers in discriminating against those who disregard the common welfare is lacking, not in a few scattered instances, but in many." "Furthermore, even when individuals do have an interest in discriminating, they frequently lack the information, the time, the willingness, the intelligence, or the bargaining power to do so."

3. Professor Slichter's own generalizations are not always successful. His thesis that *aggregate* wages may be decreased by increasing the number of laborers calls for some highly improbable assumptions. His contention that the scrapping of obsolete equipment has the net effect of "enforcing" a higher rate of saving is, to say the least, unproved. His further suggestion that the paying off of debts increases social capital neglects all but the most superficial aspects of the processes of capital accumulation. The fact that few industries ordinarily produce at their peak capacity does not lead, as he supposes, to the conclusion that "chronic underproduction is an inherent characteristic of free enterprise." Such a conclusion would be a just inference from a state of chronic unemployment, but not from a state of chronic overequipment. Slips like these suggest that the "extremely general and highly simplified" type of theory to which Professor Slichter objects may not altogether have outlined its usefulness.

I know of no more effective brief for the prosecution than the one Professor Slichter submits. At only a few points does he put new counts into the indictment; but his method gives fresh meaning to the old ones. He does not argue his case, he merely marshals his evidence in such a way that it has a cumulative effect. I venture to say that no one can read his paper without having his own thinking affected. If that be true, Professor Slichter has made a substantial contribution to economics. [4]

I have tried to get the precise drift of Professor Copeland's discussion of "Communities of Economic Interest

4. Professor Slichter intends that his paper should be taken primarily as a criticism of the theory of value and of the central position that theory occupies in economic thought. "Quite clearly, the question of how value works is quite as much a part of the value problem as is the question of how it is determined." I should go quite as far, and even a little farther, for I do not believe that the two questions can be separated. This is a convenient place at which to observe that not only Professor Slichter, but a number of his fellow contributors, as well, appear to identify not only "economic theory," but "economics" with certain particularly thin and abstract formulations of the general theory of value and distribution. I infer even that when the "economic systems" of earlier writers are mentioned, only their theories of value and distribution are meant. Economics is condemned for its neglect of everything but general theories of value and distribution, when in some cases, it appears, the critics are closing their eyes to everything else. For example, Professor Slichter forgets that not only in Alfred Marshall's work, but in the work of many American economists, there is much that can be described by what Marshall said in the preface to his National Industry and Trade: "The present volume is occupied in the main with the influences which still make for sectional and class selfishness; with the limited tendencies of self-interest to direct each individual's action on those lines in which it will be most beneficial to others." This sundering of a certain part of the structure of economics from its *relations* is probably in part a consequence of the unnatural separation of "pure theory" and "problems" that has prevailed in the curricula of American universities. A striking illustration of what I have in mind is at hand. A reader of this volume, with no previous knowledge of the subject, could not infer either from the individual papers or the bibliography (which, by the way, is not a credit to American scholarship) that economists are ever concerned with problems of international trade. And yet it is clearly impossible to understand the general structure of economic doctrine without understanding how large a part problems of international trade played in shaping it.

and the Price System," but must confess failure. However, Professor Copeland is fond of such words as pecuniary, technological, profitivity, anthropomorphic, and the like, so that his interests and the influences which have helped to shape them are fairly clear. Yet it must be said that Professor Copeland is more temperate than some of his collaborators in his treatment of economists in general, and that he has evidently endeavored to work his way through to honest conclusions. And I get the impression that these conclusions, if they could be divested of their uncouth terminology, would invite thoughtful consideration.

There remain to be considered [5] the papers of Professor Mitchell, on "The Prospects of Economics," and of Professor Douglas, on "The Reality of Non-Commercial Incentives in Economic Life." Professor Mitchell's contribution is accorded the place of honor in the makeup of the volume—a circumstance which helps to attract attention to the way in which some of the papers which follow (in general, the more dissentient ones) unmistakably reflect Professor Mitchell's influence. At some points, however, Professor Mitchell himself seems to have departed from his earlier views.

No economist of his generation has made more important substantive additions to economic knowledge

5. To keep this review within bounds, I have to forego any extended consideration of the chapters contributed by Dr. Hale and Mr. Soule. Dr. Hale, writing on "Economic Theory and the Statesman," reviews the present status of the problem of regulating railroads and public utilities, and inquires into the adequacy of those portions of economic theory which have a bearing upon that problem. I should agree with his conclusion that economic theory, in its present form, does not afford the light the problem needs. Such specific proposals as Dr. Hale makes, however, are for changes in the basis of public policy, not in economic theory. Mr. Soule's views, presented in a short paper on "Economics, Science, and Art," are in some respects much like those of Professor Tugwell, and at other points are substantially like those of Professor Mitchell.

than Professor Mitchell. He has shown how fruitful quantitative methods may be, when guided and supplemented by skillful analysis. He has given new meaning and significance to various short-time fluctuations and maladjustments in our exchange economy. This substantive work of his fits into and amplifies the general structure of economic knowledge that has been built up slowly and falteringly during the last century and a half. The assumptions, the modes of thought, are such as are familiar to economists. What is new is the body of concrete experience which Professor Mitchell has patiently and deftly organized and formulated in terms of general tendencies.

It is strange, therefore, that in various other writings Professor Mitchell should have done his best to destroy confidence in the soundness of the general structure of which the best of his own work seems to be an integral part. His attacks have been directed, not at the superstructure, but at its supposed foundations. His *locus standi* was supplied by Thorstein Veblen's thesis that the character of economic science has been determined by its preconceptions. "The main canons of truth on which the science proceeded were: (*a*) a hedonistic-associational psychology, and (*b*) an uncritical conviction that there is a meliorative trend in the course of events, apart from the conscious ends of the individual numbers of the community."[6] Veblen made no attempt

6. Thorstein Veblen, "The Preconceptions of Economic Science," Quarterly Journal of Economics, vol. xiv, p. 242. Reprinted in The Place of Science in Modern Civilization and Other Essays, p. 150. I am dealing in the text, above, with Professor Mitchell's development of the first "canon." Veblen's statement respecting the second has had an equally pervasive influence. In fact, several of the contributors to The Trend of Economics appear to take it as a text. So far as English economics after Adam Smith is concerned, it rests only upon Veblen's adroit fumbling of the distinction between normative (meliorative) trends and specific tendencies. Veblen was able to maintain a semblance of logical consistency only by consigning practically all of physical

to prove or even to illustrate his thesis respecting the first "canon." It was and has remained merely a bland assertion.

That economic science proceeded on the basis of a hedonistic-associational (or any other) psychology can be proved or disproved in only two ways, one analytical, the other empirical. I shall refer to the bearing analysis has upon the matter when I come to discuss Professor Mitchell's present position. A fair empirical test might be arranged as follows. Take Hume's economic essays, Ricardo's *Principles* or James Mill's *Elements of Political Economy*, and some important modern work, say the analytical portion of Professor Mitchell's *Business Cycles*. Revise them so that neither archaisms and turns of phrasing or references to specific problems or events shall date them. Refer them to a competent psychologist, unversed in the history of economic thought or in general economic history. The psychologist is to determine solely on the basis of the psychological preconceptions the different documents reveal: (1) on what system or systems of psychology each writer bases his reasoning, (2) which wrote before and which after Bentham, (3) which wrote before and which after the "decay" of associationism and utilitarianism.

science, except descriptive genetics (not, strictly speaking, a science) to the limbo of outmoded superstitions. On any ground the thesis is untenable. Even Smith's "system of natural liberty" could be achieved only by conscious effect. By general consent Ricardo's view of the general trend of affairs was pessimistic. Mill's famous thesis that "the distribution of wealth is a matter of human institution only" might conceivably be ruled out, as something apart from the main body of his doctrines. Consider, therefore, the concluding sentence in his discussion of the stationary state. "Only when, in addition to just institutions, the increase of mankind shall be under the deliberate guidance of judicious foresight, can the conquests made from the powers of nature by the intellect and energy of scientific discoverers become the common property of the species, and the means of improving and elevating the universal lot." It is a pity that it should be necessary to take space in this journal to call attention to such obvious and supposedly familiar things.

In fact, a laboratory test is hardly necessary. Any student may satisfy himself by an exercise in "experimental thinking." My own opinion is that the psychologist would be able to put his finger on *no* general psychological preconceptions.[7]

In 1910 Professor Mitchell gave hostages to fortune in the form of an extended and favorable review of Professor William McDougall's *Social Psychology*.[8] Professor McDougall's allegation that political economy rested on hedonistic postulates, and his suggestion that a classification of general instinctive propensities would afford a better basis, gave support, of course, to Veblen's thesis. Professor Mitchell restated and amplified that thesis. "Economic theory," he said, "rests and always has rested, upon the concept of human nature posited by the theorist." "It is clearly unwise for them to continue trusting and using the traditional hedonistic psychology." One of the major problems before economists, he alleged, was to trace "the processes by which habits and institutions have grown out of instincts."

But by 1914 it became clear that economists might have wasted their time if they had set seriously at work to reconstruct their science on foundations more or less like those proffered by Professor McDougall. Instincts had multiplied under Professor Thorndike's scrutiny, Graham Wallas had put his trust in "complex dispositions," Walter Lippman had clothed some social theory in Freudian garments, Veblen's "instinct of workmanship" had turned out not to be an instinct, and a new thing, behaviorism, had made its appearance.

7. I suspect, however, that he might be able to put all of the documents somewhere in the general stream of the English empirical tradition. Veblen's own work, with its picture of systems of thought built up by the unfolding and the synthesis of preconceptions, would be more likely to be set down as Hegelianism dressed in a modern *patois*.

8. "The Rationality of Economic Activity," Journal of Political Economy, vol. xviii, pp. 97, 197 (February, March 1910).

Most of all, a number of economists had argued that economics does not require psychological postulates.[9] Nevertheless, Professor Mitchell stuck by *some* of his guns, and brought up new ones.[1] "It is possible that the effort to keep the study of human nature out of economic theory may break down.... It may be that economists will find themselves not only borrowing from but contributing to psychology. For if that science is ever to give a competent account of human behavior it seems necessary that economists should do a part of the work." But he still insisted that hedonism had "exercised a potent influence upon economics."

In the paper now before us, Professor Mitchell again appears to alter his position,[2] and, in my opinion, for the better. I quote a significant passage:

> Economics is necessarily one of the sciences of human behavior. Whether its votaries recognize the fact or not, it endeavors to show how men deal with each other in getting their livings. Now no man can possibly give an account of economic behavior without having some working motives of human nature on the back of his tongue. No one can lay down any proposition about business transactions without implying[3] that men have different standard ways of feeling, thinking, and acting in their market dealings with each other. It is therefore naïve to talk of divorcing psychology from economics.... It is equally naïve to talk as if the economist borrowed or could

9. A list is given by Professor Mitchell in the paper cited below. I venture to add a reference to my remarks about Jevons's hedonism, in the American Economic Review, vol. ii, p. 582 (September 1912).

1. "Human Behavior and Economics: A Survey of Recent Literature," Quarterly Journal of Economics, vol. xxxix, p. 1 (November 1914).

2. Nevertheless Professor Mitchell deems it proper to say: "Our orthodox economists have a most inadequate conception of psychology — and economics also for that matter."

3. To infer psychological generalizations *from* generalizations about business transactions is, of course, not the same as deducing generalizations about business transactions from generalizations about "the original nature of man." And as a matter of fact I can generalize about *some aspects* of the behavior of one of Professor Mitchell's price series, without inferring, implying, or learning anything about the "nature of man."

borrow all his psychological notions from the psychologists. For if economics deals with economic behavior, then it must go beyond the contributions which professed psychologists make to the general science of behavior. The economist will learn more in his own field of course if he begins tilling it with sound psychological conceptions to help him; but the soundest general conceptions of "the original nature of man" and its modifications in the course of experience will be merely a starting point for his own researches into human behavior.

The psychologists and their contributions to economics are receding into the background. It might even be inferred that the (behavioristic) psychologists have more to learn from economics than the economists have to learn from psychology. One further step, I think, Professor Mitchell will ultimately be compelled to take. The truth is that economics not only should be or is, but always *has been* a study of human behavior,[4] getting its data from experience, not from psychological postulates.

Professor Mitchell's explanation of the general structure of Ricardian economics, now runs, like Professor Edwin Cannan's, in terms of the special problems of the post-Napoleonic period. But this new instrumental explanation is supplemented by a renewed insistence on the importance of a priori psychological elements in Ricardian economics. These elements, however, are no longer lumped together as "hedonism" or "associationism." We are now told that Ricardo's conclusions "rest on the broad assumptions concerning economic behavior which a thoughtful financier had found dependable." Among these assumptions are the restless desire of capitalists for profits, modified by an aversion to certain trades,

4. Compare the judicious findings of Professor Z. C. Dickinson, in his Economic Motives. I should agree with Professor Dickinson that there may be special aspects or corners of economic activity upon which the researches of the psychologist may throw important light. On the other hand, there are important and necessary elements in economics which are not to be subsumed under "human behavior."

the habits and Malthusian instincts of the laborers, and the Olympian passivity of landlords. (In Professor Mitchell's 1910 papers his general allegation respecting hedonism was supplemented by somewhat similar specifications.) Now this is vastly better than tossing off Ricardo as a hedonist, but it is not enough.

As a matter of fact, it is impossible to deduce Ricardo's system from psychological postulates, unless the postulates are made so numerous that there is a one-to-one correspondence with every separate *element* in his system.[5] In short, Ricardo's postulates are found only *in* his system; in fact, I believe it substantially accurate to say that they *are* his system. Professor Mitchell has charged economists with having rationalized economic behavior. He himself, following, I admit, a goodly number of precedents, has rationalized economic science. For exposition's sake, or because they thought logical consistency required it, or for some much more subtle and obscure reason, economic theorists have often presented their doctrines as though they flowed from some first principle. But the first principle is generally purely ornamental,[6] like the meaningless "desire for wealth." The real soundness of a system of thought depends upon its internal consistency and upon the accuracy with which it summarizes the pertinent parts of experience. These considerations hold true not only for so-called deductive economics (the "deduction" is only a

5. I cannot define an "element" except as that which would in strict logic demand a separate postulate. There are scores of such elements in Ricardo's economics.

6. When Professor Fetter substituted "choice" for utility as a first principle, the change not only did not but could not, of itself, effect Professor Fetter's practical conclusions. Similarly, it is obvious that we could "base" Professor Mitchell's explanation of business cycles upon an explicit hedonism without altering his findings. The utility of fictional first principles is expounded in Vaihinger's philosophy of the "as if" (lucidly summarized by Havelock Ellis, in The Dance of Life, ch. iii).

matter of expositional form[7]) but also for "institutional" or any other variety of economics.

Imagine a scholar from Mars, equipped with (1) a sufficient knowledge of our physical environment and its behavior, (2) a sufficient knowledge of the institutional relations (not behavior) of men, and (3) a "postulate," such as, say, that men behave as good hedonists should. Require him to formulate a political economy, and he would be helpless. Tell him then "men desire wealth," and he would reply, "But you have told me that wealth *is* whatever men desire that is not to be had freely." Give him Professor Mitchell's revised Ricardian postulates, and he would, for practical purposes, be equally helpless. But give him Ricardo's general fund of human experience, including his knowledge of the way men behave in their business relations and of the way prices, rents, and other things behave, give him also Ricardo's knowledge of what Smith, Malthus, West, and others had said, give him Ricardo's interest in the problems of his day, give him finally Ricardo's power of generalization, and he could write Ricardo's *Principles*.

One cannot tell just how many "postulates" deductive economics requires. Nor would there be any practical purpose in trying to find out. The postulates change and grow as experience grows and as experience is better formulated. A very considerable part of our postulates can never be found anywhere else than in that direct and subtle kind of knowledge we call "common sense."[8]

7. "The distinction between theory and practice we owe, indeed, like many another distinction, to the Greeks, but the divorce is our own contrivance. Accordingly, a theoretical knowledge of human, as of animal, behavior would mean to them the sort of knowledge that corresponds to the facts, and enabling one to deal with the facts in a practical way." Lane Cooper, The Greek Genius and Its Influence, p. 10.

8. Even in pure geometry, the task of accurately determining the necessary postulates and fixing their minimum number has been difficult. And in general the task of putting "rigor" (strict deductive form) into

Even a fuller knowledge of "economic motives" does not help much, for "motives" are merely abstract names for general classes of behavior. I do not feel that Professor Douglas's interesting discussion of non-commercial incentives substantially increases our stock of useful knowledge. Professor Douglas had his rubrics ready-made. He looked for apt and interesting illustrations and found them. To be considered, also, is the notorious unreliability of the data available for such a study.[9] Nevertheless, studies like Professor Douglas's undoubtedly help to give a concrete content to our general notions.

The "economic man" was a fiction, not of economics, but of the sterile formal logic of economic method, for much of which, of course, economists themselves have been responsible. What the economists really abstracted was one special class of human relationships. Or better, they took into account the world as they knew it, modified only in that their eyes were focussed on the impersonal types of relationships that are to be found in the market places of countries where modern commercial institutions have been developed. They did not rationalize human behavior; they merely put into generalized form [1] their knowledge of some very real

pure mathematics has always lagged considerably behind the growth of mathematical knowledge. In mechanics (a much simpler subject than economics) a rigidly deductive form is impossible. Not only inductive facts but common sense must be drawn upon. "Common sense, or better perhaps, good sense, comes close to being that *esprit de finesse* which Pascal, in a famous passage, contrasted with *l'esprit géométrique*." Léon Lecornu, La Mecanique, p. 1.

9. For example I do not doubt that Mr. Ford is perfectly sincere in saying that he has been motivated by "the ideal of service." But no one is a reliable judge of one's own purposes.

1. The processes of constructive thought are, of course, exceedingly obscure. We know that induction and deduction are terms properly applicable to forms of exposition and verification, not to thinking. I hazard a guess that in the actual construction of economic science analogies and "models" have had much to do with the form generalizations

types of behavior. Their knowledge was incomplete, their generalizations were often too loose or too rigid, they failed to take account of all the available experience that was important for their purposes. But their method was not at fault, for, outside of the field where controlled experiments are possible, it is the only method science knows. A better knowledge of general psychology might have helped them here and there. It could not substantially have changed their postulates.

Professor Mitchell might conceivably say to all of this that he would consign the whole theory of value and distribution to the scrap heap, and that he would pin his faith to what he describes as "an unorthodox type of economic theory — a type of theory that deals with a range of problems undreamt of in the philosophy of value and distribution." This is "institutional economics." Its older forms, for one reason or another, were defective. "But by the eighteen nineties, Sidney Webb in England, Werner Sombart in Germany, and Thorstein Veblen in America were studying the evolution of economic institutions in a scientific, as opposed to an historical or a propagandist, spirit. Further, they were claiming that work of this kind is economic theory."

Let us take Veblen's work as a type. Sombart's work, I grant, is much like his. Sidney Webb's is substantially different. Without raising now the old ques-

have taken. Thus our generalizations relating to diminishing and marginal utility are not "deductions" from any psychological postulates, but would appear to be organizations of our knowledge of a larger field of economic behavior upon the analogy of or after the model of generalizations already successfully established with respect to the behavior of the market place. This hypothesis would help to explain the fact that the notion of marginal utility served in its turn as the model upon which some able Austrian psychologists organized a yet wider body of experience into an interesting type of psychology. Thus instead of an economic theory based on hedonistic postulates, a psychology was modelled (not based) upon economic theory.

tion of the possibility of getting verifiable historical "laws," glance at the general character of Veblen's work. He is a man of genius, but the term scientist does not fit him. He is something that may be as good or better: an artist, an impressionist, painting the picture of the world as he sees it. No one else would see it in just the same way, except through his eyes.[2] In modern stagecraft a slight difference in lighting changes the whole scene. So it is with institutional economics.

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2. Sometimes, however, writers with developed powers of perception may see certain details alike. Says Joe Scott in Charlotte Brontë's Shirley, "Them that's mechanics, like me, is forced to think. Ye know, what wi' looking after machinery and sich like, I've getten into that way that when I see an effect, I look straight out for a cause." Cf. Veblen's collected economic essays, *passim*.

BRITISH OPINION ON THE GOLD STANDARD

SUMMARY

The proposal for a controlled currency. — The arguments advanced for it, 185. — Great Britain convinced that practical considerations make it undesirable, 186. — Distrust of the authorities to whom control must be entrusted, 187. — Objections to the gold standard itself not conclusive, 189. — The supply of gold probably adequate, 190. — The power of the Federal Reserve Board not so great as supposed, or likely to be used in drastic ways, 192. — Conclusion, 194.

EVERY discussion in England on monetary policy starts from the premise that what is needed above all else for the restoration of Europe, and therefore of British trade, is currency stabilization. But altho this phrase has been on everybody's lips it has not had — except among economic theorists — a much sharper definition than that blessed word "Mesopotamia." In particular, the business man has not distinguished clearly between the stabilization of internal prices and the stabilization of the foreign exchanges; all that he has in mind is to avoid if possible having to face either a drastic fall of prices such as that which occurred in 1920–21, or the disturbing effects upon trade generally of abrupt and drastic depreciation of this or that currency such as he has experienced in constant succession during recent years. Of the two influences, the latter motive has been uppermost since 1921. In British industrial circles our continued subnormal production is chiefly attributed to the depressing effect upon prices of low quotations from depreciated exchange countries, combined with the fact that the causes which have produced this depreciation have also caused a low level of

economic activity in Europe and have thus depressed the level of world trade.

At the same time there remains a very real fear of violent fluctuations of the British price level. This frame of mind has afforded a favorable soil for the ideas propounded by Mr. Keynes and others, who have argued for a controlled currency and have deprecated a simple reversion to the pre-war gold standard on the ground that this would not secure the longed-for "stability." The arguments are familiar; I need only refer very briefly to them here.

In the first place the history of prices shows that gold has in the past not been a steady standard of value, but that on the contrary its fluctuations have from time to time done injustice either to creditors or to debtors, as the case may be.

This argument is supported by several present-day considerations. It is said, for example, that gold is, under existing conditions, at an artificial value determined largely by the policy of the Federal Reserve Board of the United States; that the latter is at the mercy of political influences and that in tying ourselves to gold we should be adopting a standard which is at the mercy of forces which have no relevance to British or European conditions. Moreover, it is argued that the United States as a creditor country will desire that gold shall have as high a value as possible and is therefore likely to favor a steadily falling price level. This tendency is likely to be strengthened by the existence of a pre-war complex among American business men, which leads them to think still of the pre-war price level as "normal." In so far as the United States holds such views and is able to put them into effect, it means that if we return to the gold standard we must be prepared for a long period of deflation.

Again it is argued that, whatever might be the intention of the United States, the gold supply of the world is such that, if many countries go back to the gold standard, gold must appreciate above its present value and prices must fall. Now it is common ground to both pro- and anti-goldites that Great Britain cannot face a substantial fall in the general price level, not merely because of the depressing effect which a substantial fall of prices would have upon general trade, but also because a lower price level would mean that the burden of taxation, already very heavy, would become unendurable. This is a very serious prospect. The national income for 1923 has recently been estimated at £3,800 millions. Of this amount, central taxation takes 19 per cent, and local taxation (excluding taxes for drains, roads, lighting, etc., which are to a greater extent than most taxes a direct payment for proportionate services rendered) amounts to an additional 2 per cent, making 21 per cent in all. Of this figure, 8 per cent represents interest on war debt and would not be reduced by a rise in the value of money. There are several other items, such as War Pensions, Interest on Local Loans, etc., to which the same argument applies. Hence a substantial fall in the price level, which would considerably reduce the total of the national income, unless accompanied by an equivalent increase of production, would raise appreciably the percentage of taxation to national income.

None the less, all these arguments have failed to convince Great Britain of the desirability of seeking "stabilization" through some method of artificial monetary control. There is room for doubt, even in theory, whether a perfectly steady level of prices represents the monetary ideal. So far as periodical fluctuations are concerned, there is something to be said for the view that

periods of slightly rising prices are periods of enterprise and expansion; those of falling prices, of economy and consolidation. If we were able to iron out the price curve we might find we had to substitute stagnation for progress, particularly in a conservative country like Great Britain. Moreover, even in the long run a slightly falling price level may have advantages over a quite fixed level. It will be recalled that Professor Marshall once put forward the suggestion that the ideal price movement would be one which would give to people with fixed incomes a reasonable share of man's increasing control over his environment.

But British opinion has been influenced not by theory but by practical considerations. If the system of control is to work effectively there must be some automatic standard which will enable the controllers of the system to know what is going to happen, and there must be agreement as to what index number is the true test of the value of money. As yet, the statistical apparatus that would be required for any such system is extremely inadequate. The public would not be willing to put their faith in any system until they understood, and had ample belief in, the criteria that were to be used. That this is not an imaginary difficulty is shown by the strong criticisms that were made upon the Board of Trade's Cost of Living Index Number as soon as it began to fall and bring about reductions of wages in trades in which it was used as a means of regulating wages.

But even this is not the final objection. The real reason why Great Britain will reject the proposal is that the scheme necessarily leaves to the controllers great discretionary power; and the country is not prepared to entrust so powerful a weapon to anyone. So long as the Treasury cares to allow it, the control of currency would naturally reside with the Court of the Bank of England.

The Bank Court commands very great respect in the City; but British industrialists are disposed to think that it is mainly swayed by financial interests and that it has not always given sufficient weight to the problems of industrialists. There was considerable criticism of bank rate policy and the policy of the big banks generally during the slump of 1920–21, and the Federation of British Industries would not be likely to acquiesce in giving authority to the Bank of England to check the expansion of trade at an early stage with a view to keeping a stable level of prices. In any case, any such decision under present conditions would be extremely difficult, for it involves an assumption as to what is the normal post-war production of Great Britain. Industrialists would most certainly argue that we are being kept below normal by special circumstances, that a quick recovery to a higher level, which might permanently be retained, is in the interest of the nation, and that some rise of prices would be a natural accompaniment of such a recovery. The industrial world would be very unwilling to give discretionary power to the Bank of England on this point, and it may be added that the Bank of England itself would be extremely unwilling to undertake any such responsibility.

If it is suggested that control should in fact be exercised by the intervention of the Treasury, the objections would be even stronger. We have every reason to be proud of the technical efficiency of the British Treasury and the judgment of its leading officials. But financial policy may at any moment become a first-class political issue. If our monetary system were liable to be influenced by a change of government, there would certainly be no assurance of stability in monetary policy.

If such considerations as these are the determining ones in the case of Great Britain, they are much stronger

in regard to European countries. After the experience of the last three years, British public opinion would have little confidence in the stability of European currencies if they were deliberately based on a system of artificial control. It is true that in post-war conditions, if countries go on to a gold basis, the value of gold itself will most certainly be influenced by monetary policy. But the rules of the game in regard to gold are much better understood than the refinements of index numbers, and in important respects the restoration of the gold standard is in a real sense automatic as compared with the methods which have been adopted in Europe recently.

In practice, therefore, the choice which presents itself is not one between a perfect theoretical standard on the one hand and gold with all its imperfections on the other, but between this gold standard — which will, at all events, tie the exchanges together — and no control at all.

This is, however, by no means the whole of the story. While the objections to an artificial standard are the determining factors, there are some reasons for thinking that the objections to gold are not as well founded as might appear at first sight.

In the first place, the case against gold as a standard of value is not an overwhelming one. In the century before the war, it is true, gold did not behave perfectly as a standard of deferred payments; but proposals for a more theoretically perfect standard were refinements on a standard that for the most part worked reasonably well, rather than proposals intended to deal with fundamental social issues of grave importance. It is true that the decline in agricultural prices in the last quarter of the nineteenth century was a major issue, particularly in the politics of the United States; but the difficulty

here was not merely a fall in the general price level but the fact that wheat fell heavily in relation to general prices. Moreover, if we take a very wide view, the economic effects of this fall in agricultural prices have to be set against the fact that the drop was one of the considerations which enabled the industrial worker in all parts of the world to secure a continuous and rapid rise in his standard of living. No economist would deny that gold as a universal standard has not always behaved as it should from the point of view of a stable standard over considerable periods of time. But these drawbacks are comparatively unimportant as compared with the advantage that would be conferred in times like the present by a policy which would create a world price level and tie up the currencies of so many countries in relation to one another.

The arguments in favor of gold would be very weak if it were certain that by keeping it we should have to face a radical rise in the value of gold itself or, in other words, a sharp fall in gold prices. Unfortunately, there can be no assurance as to the future value of gold, and decisions will have to be taken without definite knowledge or even an agreement of opinion on this important point. There are, however, some reasons for doubting whether a return to a gold standard in Europe will necessarily be followed by a rise in the value of gold. Gold was depreciating before the war, owing to the fact that the total supply was increasing at a faster rate between 1895 and 1914 than at any previous period of history. This rate of increase has not been quite maintained, but the output of gold has remained very large; in November last, South Africa recorded the largest production in her history. It is therefore tolerably certain that if the war had not intervened the upward movement of prices

would have in any case continued and the level to-day would have been substantially higher than that of 1914. In the interval, however, the nations have grown accustomed to substituting paper for gold which has gone out of circulation, and it is highly improbable that gold will come back into general use in Europe. The notes which take its place, tho convertible into gold, need not be based on 100 per cent reserve. Moreover, in any case currency will be economized in Europe by the increasing use of the cheque system. For these reasons it is certain that the gold standard can be restored in many countries under conditions in which their requirements of actual bullion, even at the present level of prices, will be much less than their former currency circulation. Indeed, there seems no reason why many of the countries of Europe should not return to a gold standard with very little increase, if any, in their existing gold holdings. The only important exception is perhaps that of Germany, where it will be necessary to add something of the order of 30 millions sterling at least to her present gold reserve. The reserve of Europe should for the next decade show some expansion as the volume of European trade recovers and grows in proportion to a growing population. But this requires only that a portion of the new gold production available for currency purposes should flow to Europe instead of to the United States. It is evident that the United States could, if it so desired, part with the comparatively small amount required by Germany and get along without any increase in its gold reserve for many years to come and without the inconvenience of a fall in price level, by the simple expedient of retaining a note issue only partially covered by gold. It is clearly in no way essential for the monetary stability of America that her paper currency should be in fact a gold certificate currency. The factor

that makes the future of gold obscure is not the position in either America or Europe, but the apparently unlimited appetite of India for gold.

Again, the argument that Great Britain would be rash to tie itself to a monetary standard which is in effect at the mercy of the Federal Reserve Board and of the political influences that may be uppermost at the moment in Washington has not so much force as appears upon the surface. In the first place it may be doubted whether the Federal Reserve Board in fact is in control of the monetary and price situation in America to the extent which the argument implies. The United States is not an economic unit in anything like the same sense as Great Britain or France or Germany. Even in Great Britain under normal conditions the Bank of England is not by any means always in command of the market and may have to take very strong steps to establish control if it wishes to do so. Clearly, the Federal Reserve Board can control the situation at times approaching a crisis; but at other times the operations of the Federal Reserve Banks are only one factor, and not always the most important, in credit and prices.

But even if the Federal Reserve Board be regarded as dictator of prices in the United States, it is extremely doubtful whether it is likely ever to use this power in one direction or another. One section of the community wants low money rates and high prices; others are seriously concerned to prevent anything like a price rise on the scale of the last boom. If a prediction may be risked, it is that the Federal Reserve Board will try to keep out of politics; will refrain from variations of its discount rates as much as possible in order to escape public and often ill-informed criticism; will rely upon purchases and sales in the markets in order to exercise such control as it may judge necessary. Further, that it

will not act in pursuance of any theory of prices unless it be stabilization of the price level, and that in practice it will be governed much more by its views of the soundness or otherwise of the financial and commercial position than by the price level. In other words, it will act very much on the empirical lines that the Bank of England follows and apply what both bodies would probably describe as the practical views of practical bankers.

The history of 1920 is not any guide in this matter. Nor is it reasonable, as is sometimes done, to ascribe the blame for the wild price movements of 1920 to monetary policy in the United States, or to argue that the Federal Reserve Board precipitated an unnecessarily sharp decline. The fact that the Federal Government was in 1919 a large borrower prevented the Federal Reserve Banks from acting as freely as they would have done had their hands not been tied by the necessities of government war finance. Moreover, the United States only shared with the rest of the world an inevitable movement springing from the release of private enterprise from the bonds of control and from the temporary madness which ensued. The reaction could not have been seriously modified by the wisest monetary control. Today there is some reason for thinking that the increasing knowledge of the economic situation in respect of production, stocks, etc., which is being extended in the United States, will tend to prevent excessive price movements. If this hope is realized and America's monetary policy, so far as it has any conscious aim, tends to stability, Europe has little to fear from the bogey of an unwise and undue influence exercised by the Federal Reserve Board.

Finally, if the question be put in the form of a choice between stability of prices and stability of exchange, it cannot be answered off-hand, so far as Great Britain is

concerned, in favor of stability of prices. It is true that if Great Britain could invent an artificial standard which would stabilize our money in terms of commodities it would mean that the British pound would be the safest unit in the world to invest in. But very few people outside the country would believe this, even if they thought that the policy would be maintained; hence they would most certainly transfer their capital to a country with a standard which they understood. Credit, as its name implies, rests upon opinion; and if Great Britain announced to the world that people who put their money with us would be repaid not in a fixed value of gold but in a measure representing a fixed quantity of British goods, no one doubts but that those who are accustomed to insure in Great Britain, to leave their floating balances with us, to finance their commercial transactions in London, and to use its commercial facilities in many other ways, would turn elsewhere. I do not suggest that the problem is a choice of the two evils of having to endure either drastic price changes or violent exchange fluctuations. But, if it were so, we should have to set against the damage that would be done to British industry by fluctuating prices a very definite loss to Great Britain by the damage that would be done by a fluctuating exchange.

In short, Great Britain has come to the conclusion that even if it be shown that a controlled currency is best in theory, this course is beset with very great practical difficulties, and that the wise and safe course for the present is to get back to the pre-war gold standard. The gold standard at least eliminates the possibility of the violent exchange disturbances which have held back the recovery of the world. It offers the surest safeguard against immediate difficulties and dangers, and offers a safe starting-point from which to strive to attain a still

more assured degree of stability of prices by measures which may serve to stabilize the value of gold. British opinion is in the main represented by the conclusion of Professor Pigou, who has recently declared that "so far as the United Kingdom is concerned, until the gold standard has been re-established, more elaborate improvements in our monetary system are not practical politics."

W. T. LAYTON.

THE ECONOMIST, LONDON.

A PROPOSAL FOR REGULATION OF THE COAL INDUSTRY

SUMMARY

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I

In all the industrial unrest of the war and post-war periods no other industry of the United States has been in quite so chaotic a state as coal mining. No other industry has aroused so general and so unanimous a feeling of discontent and dissatisfaction on the part of those closely concerned with it. No other has been so much discussed and so much investigated. No other has made so little progress toward permanent stability. In

no other country of any importance as a coal producer is there such disorganization in the industry.

Miner, operator, and consumer have joined in the general complaint against the coal industry in the United States. The miner has claimed that his wages are too low, and there have been numerous strikes to increase wages or to prevent the lowering of existing scales. The consumer has had to pay higher and higher prices, and he has frequently been unable to secure coal of the desired quality or in the desired quantity. The coal operator, it might seem, should be content, if it is true that wages are too low and that prices are too high; but he has added his complaint to that of miner and consumer. His profits have been too low. Many mines, it is claimed, are working at little or no profit. Some are working at an actual loss.

This general dissatisfaction has led to much discussion and to careful study, but no method for permanent improvement has been brought to light, or, if a method has been found, it has not been possible to put it into practice. At times relief has seemed to be in sight. Periods of greater business activity have increased the profits of the operators for a while. The recent wage-agreement signed at Jacksonville has pacified the miners for three years at least. The uninterrupted operation of the mines has resulted in some lowering of prices and has made coal shortages, when they occur, less serious. But all these improved conditions can be only temporary. All the elements of discontent and conflict remain in the industry and will most certainly make themselves felt again. A new adjustment of the coal industry is just as necessary now as it was in the fall of 1922, when the United States Coal Commission was appointed. The fact that it is a period of comparative peace makes it a most favorable time for introducing changes.

Since all three of the groups in the industry — miner, operator, and consumer — have been in difficulties, the fault can hardly lie with any single one. It lies rather in the lack of coöperation existing between the groups. In a readjustment of this relationship is the most promising approach to a solution of the coal problem. To put an end to fruitless conflict and to bring about the recognition of the community of interests that in reality exists between the groups, it is proposed that a permanent coal commission, or parliament, should be established, made up of representatives of all those who are closely concerned with the coal industry.

In presenting the proposal for the parliament, it will be the plan of the present article, first of all, to analyze the coal industry briefly, pointing out its striking weaknesses; secondly, to examine the means by which such weaknesses have been eliminated or overcome in the important coal-producing countries of Europe; thirdly, to state in some detail the plan of the permanent coal parliament, with its advantages; and finally, to enumerate some of the specific remedies that such a parliament will bring to the coal industry.

Chief emphasis will be placed on the bituminous coal industry, for conditions there are much more chaotic than in the anthracite industry. It is in the bituminous industry that the need for reorganization is most pressing.

II

It is agreed that this basic industry is in a chaotic condition. The degree of the chaos is evidenced by the complaints of the three parties concerned — operator, miner, consumer. It is also agreed that most of the chaos in the industry can be traced to the irregular operation of the mines. Wages and profits are low and

prices are high because the mines are in operation only about two thirds of the working year. During the 32-year period from 1890 to 1921, the bituminous mines of the United States were in operation, on the average, 214 days out of a working year of about 308 days.[1] This average conceals extremes of 149 days worked in 1921, as the low record, and 249 days worked in 1918, as the high record.

Another measure of the irregular operation of the mines is the irregularity of output. In Figure I the coal output of the United States, both bituminous and anthracite, is shown by months, beginning with 1913.[2] The bituminous output especially, it is obvious, has been highly irregular.

Fluctuations of three sorts appear. First, there are the fluctuations from year to year reflecting current business conditions, which are not within the control of the coal industry. Second, there also appear from time to time very sudden and very sharp fluctuations, caused by strikes. The strike in 1919 resulted in a drop in monthly bituminous output from 57,000,000 tons in one month to 19,000,000 tons in the next, and in 1922 there was a drop from 50,000,000 to 16,000,000. Yet, tho the fluctuations due to strikes are the most conspicuous, strikes are by no means the most important contributing cause to the irregular operation of the mines. During the period from 1899 to 1921, only 9.8 per cent of the idle time in the bituminous mines of the United States was due to strikes.[3]

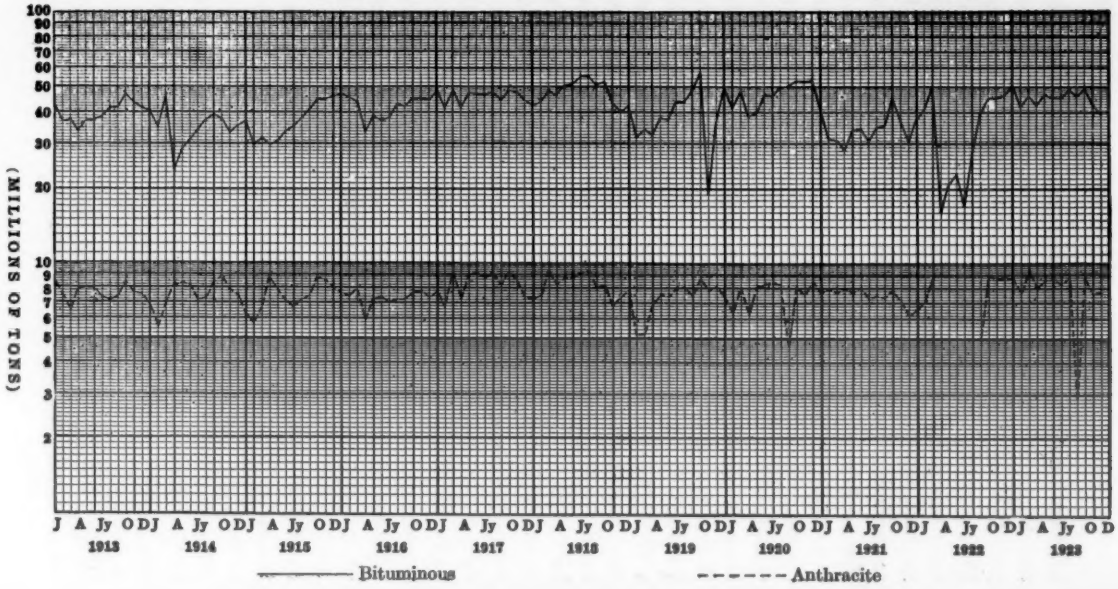
1. United States Coal Commission Report, Relief from Irregular Operation and Overdevelopment. September 20, 1923.

2. The data for Figure I for the years 1913–21 are taken from Mineral Resources of the United States, 1921, pp. 464–465; United States Geological Survey. For later years they are from weekly news releases of the Geological Survey.

3. United States Coal Commission Report, Labor Relations in the Bituminous Industry. September 15, 1923.

FIGURE I

BITUMINOUS AND ANTHRACITE COAL OUTPUT OF THE UNITED STATES, BY MONTHS, 1913–1923



Most important are the fluctuations that occur uniformly every year and reflect the seasonal character of the demand for coal. They are more marked in the bituminous output than in the anthracite. The normal seasonal bituminous curve shows a fairly high output in the spring, a decided slump in the summer, and a rapid rise in the winter months. The seasonal fluctuations are the most serious factor in the irregular operation of the mines and in the irregular employment of the miners.

Seasonal irregularity in coal production is not new. To the miner and mine operator, it is an old story. It has been a problem to them ever since coal-mining began in this country, tho in the early days it was not very serious. The number of days worked during the year may have been few, but the owner had little capital invested in the mine, and during the slack season he could turn his energies to farming or to lumbering. It was an easy shift for the miner from the mine to the farm, or to the forest, or perhaps even to the fishing fleet if the mine happened to be located near the ocean. With the increasing importance of the coal industry, this shift of capital and labor has not been so easy, and miner and operator have suffered losses in wages and in profits. Seasonal irregularity is attracting so much attention at present because it has been aggravated by the unusual conditions of the war and post-war period, and because its effects are now being felt by the consumer as well as by the miner and operator. The railroads, because they have not expanded their facilities in recent years as rapidly as mine capacity has increased, are unable to handle the peak of the coal production as effectively as in the past.

Irregularity of mine operation is a most fruitful cause of labor difficulties. The miner, since he and his family must live the whole year on what he can earn during two

thirds of the year, must demand what appear to be high wages. Irregularity has a direct influence on the relations between employer and employee.

> In an industry where irregularity and unemployment are so acutely chronic, satisfactory relations between employer and employee are almost impossible. An undercurrent of discontent is created on both sides which discourages effort for fundamental improvement of relations. It also directly creates difficulties. It breeds irregular habits on the part of the miner; it encourages a high rate of turnover. From almost every district it is reported that miners move about seeking steadier work. It is responsible for much limitation of output as there is a strong feeling against "hogging" the limited amount of work; it stimulates revolt against established order in government and in industry, and hence means insurgency against the union, against the agreement, and against the operator.[4]

One union official stated to an investigator of the Coal Commission:

> It is more difficult to maintain harmonious relations at the mines that are operating only two or three days each week than it is where men have full opportunity to work.

Another said, "We never have any trouble when mines are running full time." [5]

The irregular operation of the mines adds to the cost of production and eats into profits. Certain activities about a mine must be continued whether it is worked or not. Some costs, such as wages of mining labor and the tonnage royalty, vary almost directly with production. When mining stops, the tonnage royalty and the wages of those actually engaged in mining and bringing out the coal stop. Other costs must be met, until the mine is completely shut down and abandoned. The mine must be kept dry. The power plant, the hoisting machinery, and the ventilating system must all be kept in repair. Taxes, insurance, the salaries of general offi-

4. United States Coal Commission Report, Labor Relations in Coal Industry. September 15, 1923.

5. Ibid.

cers and superintendents, fixed royalties, and depreciation charges differ little whether the mine is inactive or being worked at full capacity. These overhead charges must be borne by the period of output. To carry them, the price of coal must be advanced or there must be a cut in the operators' profits.

At a mine working 20 days a month instead of the full 25 days, the cost of production is increased on the average by 5 per cent. If only 15 days are worked, the increase is 14 per cent; if only 11 days, the increase is 27 per cent. At a mine producing at a cost of $1.35 a ton in a full month, the cost increases to $1.43 if the mine is worked only 20 days, and to $1.68 if it is worked only 12 days. At a mine producing at a cost of $2.54 a ton in a full working month, the cost increases to $2.66 and to $3.06 for the 20 and 12 day months.[6] Since, for the period from 1890 to 1921, the average working month for bituminous mines in the United States was 18 days, irregularity of output has increased the unit cost of production by about 8 per cent.

Irregularity of output tends to increase price. It is probable that not all of the 8 per cent increase in costs is passed on to the consumer, for, during periods of little demand, prices are cut by competition. They are set by the mines of lower costs. During periods of brisk demand, as much of this burden is added to the price as the traffic will bear. Prices are increased by irregular output in another way, however, and probably to a much greater extent. The concentration of output during a few months of the year throws a heavy burden upon the railroads. They are unable to supply cars, and coal cannot be taken from the mines to the consumer as rapidly as it is demanded. A shortage either results or is threat-

6. United States Coal Commission Report, Effects of Irregular Operation on Unit Cost of Production. September 12, 1923.

ened. The scarcity of coal causes prices to rise. The threat of scarcity leads to speculation.

Since difficulties of labor, price, and profit all seem to depend so directly upon the irregular operation of the mines, the permanent solution of the problems of the coal industry must include a means of stabilizing output. Such a stabilization will depend upon the degree of success in eliminating, or modifying to a considerable extent, seasonal production. If the seasonal production can be eliminated, labor conditions will be stabilized, and strikes will contribute even less to irregularity than they do at present.

III

The fact that seasonal fluctuations are as old as the coal industry does not mean that they are inevitable. Tho the consumption of coal must continue to be seasonal, it is possible to smooth out the production curve and eliminate the seasonal fluctuations. In fact, the United States is the only important coal-producing country in which the seasonal irregularities in the operation of the mines present a serious problem. It is the only country in which the ills of the industry are so unanimously attributed to irregular output.

During the ten-year period ending with 1913, the Prussian mines were in operation, on the average, 301 days per year, the British mines, 275 days, and the American bituminous mines only 215 days. Since 308 days is the full working year, it will be seen that the Prussian miner lost approximately one week during the year and the British miner a little over a month, while the American miner was idle 93 days. In both France and Belgium, the mines are worked on the average very close to 300 days a year.[7]

7. United States Coal Commission Report, Relief from Irregular Operation and Overdevelopment. September 20, 1923.

The greater regularity of operation of the British and German mines may be shown also by a study of the monthly outputs of the three countries. Comparable data are available only for the five-year period beginning with 1919. The strikes of 1919 and 1922 in the United States and of 1921 in Great Britain caused sharp fluctuations in the output, but, if those fluctuations are ignored, a distinct seasonal trend is evident in the American data that is not nearly so evident in the data for Germany or Great Britain. To show as nearly as possible the normal seasonal trend, Figure II has been prepared. It presents the average output by months for the five-year period with all strike months eliminated.[8]

It will be noted in Figure II that the monthly output for the United States fluctuates much more than the output for either Germany or Great Britain. The spread of the United States curve is 28.3 per cent, of the German curve 18.2 per cent, and of the British curve only 7.3 per cent.

Tho the data for the period 1919–24 are far from normal, because of strikes and disturbances following the war, they are the only comparable data available. Monthly output statistics for the United States were

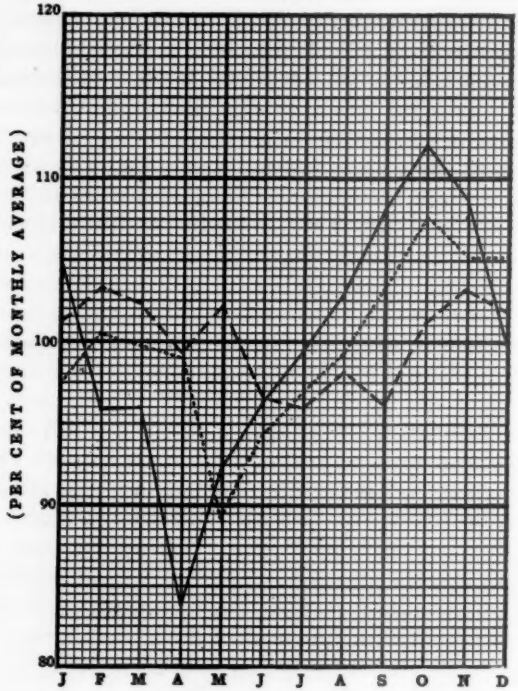
8. Data for the United States are from United States Geological Survey publications; for Great Britain, from Parliamentary Accounts and Papers, 1919, xlv (176); 1920, xlix (28); 1921, xli (63); from Board of Trade Journal, August 16 and December 20, 1923; from Iron and Coal Trade Review, May 2, 1924, and from Coal Age from April 12, 1924; for Germany, from Glückauf and from Stahl und Eisen. Data for Germany and for Great Britain for the first five months of 1919 and for Germany for all of 1923 were not available.

In preparing the chart, differences in output due to holidays and to differences in the length of the months have been eliminated by using the daily average output for the working days in each month. The daily average for each month over the five-year period has been expressed as a percentage of the daily average of the year. Thus, the daily average output in Great Britain for all of the Januarys of the period was 831,000 tons. The yearly daily average for the period was 822,000 tons. The January average was 101.1 per cent of the yearly figure and is so presented in the chart.

FIGURE II

REGULARITY OF COAL OUTPUT IN UNITED STATES, GREAT BRITAIN, AND GERMANY, BY MONTHS — AVERAGES FOR FIVE-YEAR PERIOD, 1919–1923

——— United States - - - - Great Britain ..... Germany



not published by the Geological Survey prior to 1913,[9] and the official announcement of weekly output figures in Great Britain began with the week of May 31, 1919.

9. Since Figure II was prepared the United States Geological Survey has published estimates of the monthly coal output for the years 1905–1913. See Coal in 1922, pp. 464–465; United States Geological Survey.

The data, however, present a fairly accurate picture of coal output in the three countries. If the data for the ten-year period, 1904–13, were available, much the same differences would appear, with the exception that the smoother curve would probably be that for Germany.

The more regular operation of the coal mines of Europe is to be explained, first of all, by the relation of coal consumption to total coal reserves and by the degree of development of the coal resources. In the United States, the total coal resources are very large — much larger than in any other country in the world. The coal-mining industry is comparatively new and most of the coal resources remain untouched. Of the total bituminous reserves of the country, it is estimated that less than one per cent had been mined by 1920. The coal wealth of the country invites expansion and overexpansion of the industry. Abundant deposits with thick rich seams are available, seams that can be developed with a comparatively small investment of capital. The railroads, in their competition for traffic, have always been ready to supply transportation facilities for the newly opened mine. Every period of prosperity, with its attractive profits, or even the period of increased demand in fall and winter, has resulted in a greatly increased mine capacity. The United States Coal Commission found that the capacity of the bituminous mines was sufficient to produce 25 per cent more than the peak demand, and that, if demand were spread more evenly over the year, the overdevelopment would amount to around 40 per cent.[10]

There is no overdevelopment in the anthracite mines. Indeed, the country is faced with a shortage of this excellent domestic fuel. Reserves are not large and seams

10. United States Coal Commission Report, Relief from Irregular Operation and Overdevelopment. September 20, 1923.

are generally deeper, thinner, and more broken than in the bituminous fields. The opening of a new anthracite mine involves the investment of considerable capital. In the last thirty years, the anthracite output has not quite doubled; the bituminous output has increased about fourfold. Since there is a scarcity of anthracite, the mines must be worked intensively, and the output is spread much more evenly over the year than is the case with bituminous coal. In Figure III, the average monthly outputs of bituminous and anthracite coal for the five-year period, 1919–23, are compared.[1] The bituminous output had a range of 28.3 per cent, and the anthracite output a range of 12.2 per cent. In the period since 1910, the anthracite mines have worked on the average 252 days a year, as compared with the 222 days of the bituminous mines.

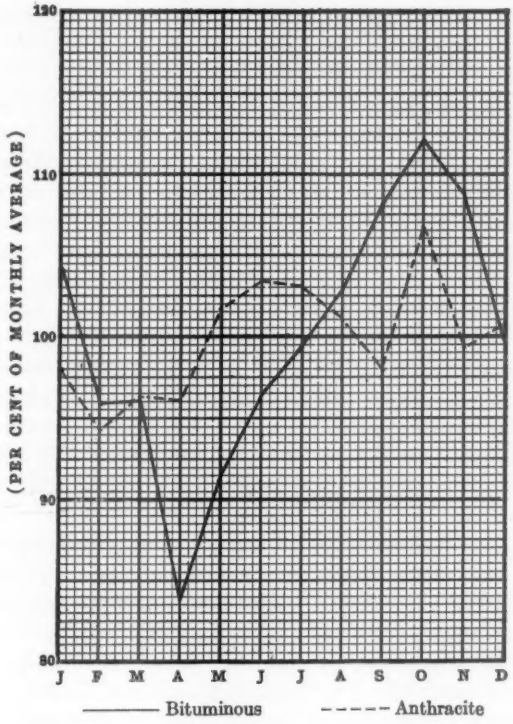
To summarize the situation in the United States, the wealth of bituminous coal resources has made possible overdevelopment, which has been invited by the high prices of the seasons of maximum demand. Overdevelopment has exaggerated the seasonal production of coal, for, with a capacity much in excess of demand, it has been possible to concentrate more and more of the production at the time of maximum demand. With a smaller capacity, it would have been necessary to produce coal in the slack season in expectation of the peak consumption. A vicious circle has been set up. Seasonal demand has encouraged overdevelopment; overdevelopment has exaggerated seasonal demand. The whole circle rests on our enormous wealth of coal. The bituminous coal industry of the United States suffers under the curse of prodigality.

The same situation does not exist in the European

1. Data from Mineral Resources of United States, 1921, pp. 464–465. The curves were constructed in the same manner as those in Figure II.

FIGURE III

FLUCTUATIONS IN OUTPUT OF ANTHRACITE AND BITUMINOUS COAL IN THE UNITED STATES, BY MONTHS, AVERAGES FOR 1919–1923



countries because conditions are not the same. The United Kingdom and Germany have large coal resources, but they are small in comparison with those of the United States. Table 1 shows the reserves of the United States and some of the European countries as of January 1, 1921.

TABLE I[2]

COAL RESERVES OF LEADING PRODUCING COUNTRIES

United States	3,535,691	48.0
United Kingdom	185,858	2.8
Germany *	255,141	3.7
France †	33,662	.5
Belgium	10,730	.15

* Saar and Polish Upper Silesia not included. † Includes Saar.

The coal-mining industry as we know it today began in Europe. It was well established there when coal was first mined in the United States. In 1835 the American output was only 750,000 tons. In the same year, the United Kingdom mined 33,000,000 tons; Germany, 1,700,000 tons; France, 2,500,000 tons, and Belgium, 2,900,000 tons. The United States was surpassed by Belgium as a producer of coal until 1847, by Germany until 1876, and by the United Kingdom until 1899. Today, tho the coal reserves of the United States are about five times greater than the reserves of all of Europe, the annual output of Europe is about 50 per cent greater than that of the United States. The area of Europe is only slightly larger than that of the United States.

Since coal mining has been going on for so long a time in Europe and since the original reserves were not large, there is no wealth of unexploited coal to invite over-expansion. The mine capacity and output are being increased, but at a rate more in keeping with the increase in demand than is the case in the United States. An increase in output usually means the exploitation of less desirable deposits — the thin seams, the deep seams, seams of lower-rank coal, or, perhaps, deposits located less advantageously for market. In Lancashire, one of the oldest of the British fields, shafts around 4000 feet

2. Based on tables in Coal Resources of the World, xii International Geological Congress, Ottawa, 1913.

deep are being sent down in some of the more recently opened mines. These shafts are probably the world's deepest coal-mining shafts with the exception of some of about the same depth in Belgium. In Germany the increase of the coal supply during recent years has been largely brought about by the mining of lignite, a brown coal of low rank. In France there had been little increase in the coal output during the years preceding the World War. Increasing demand for coal was met by increased imports.

Since a scarcity of resources effectually prevents overexpansion, it is necessary to use the existing mine capacity in European countries with the highest degree of efficiency. The mines cannot be expected to produce during the season of maximum demand sufficient coal to meet that demand. They must be operated steadily throughout the year. Seasonal fluctuations, therefore, are not a problem of the European coal industry.

One remedy for the irregular operation of the mines in the United States would be the prevention of further overexpansion, but it is a remedy not easy to put into effect. With an abundance of untouched coal land, with capital always on the lookout for investment, and with the business man ever anxious to begin new enterprises or to expand existing ones, there will be the tendency for mine capacity to keep ahead of the demand until the cream of the deposits has been skimmed. The American jealousy of the rights of the individual will make it difficult to restrict capital or the entrepreneur desiring to enter the coal-mining industry.

There has been some attempt to restrict the expansion of coal-mine capacity. In 1923 the Virginian Railway Company made application to the Interstate Commerce Commission for permission to extend its Guyandot River branch a distance of 1.19 miles, to a new

tipple of the Pocahontas Fuel Company. The application was denied. The Commission held that "there are at present more mines in the country than are consistent with the most efficient use of carriers' equipment, and their aggregate capacity exceeds greatly the country's demand."[3]

The announcement of the decision brought forth a storm of protest, not only from the railroad and coal company directly concerned, but from leaders in other lines of business activity and from newspapers. It was regarded as a dangerous precedent by all those "who dread the blundering hand of government laid on free enterprise." The New York *Times* stated editorially that "if this is to be forbidden for a coal mine (that is, the extension of track), because there is too much soft coal, why not to an oil field because just now there is an overproduction of oil? The Commission's reasoning would seem to apply to a New England railway desirous of connecting up with a new shoe factory. It certainly would apply to an extension running into the Kansas wheat fields. Any commodity of which there is a temporary surplus, or which the railroads find difficulty in transporting, might any day find itself cut off from rail facilities by this strange decision of the Interstate Commerce Commission." [4]

The Commission granted to the Virginian Railway and the Pocahontas Fuel Company a rehearing of the case, and the decision was reversed, partly because the railway and coal company succeeded in showing to the satisfaction of the commission that the coal to be produced was Pocahontas smokeless, a grade of coal of which there was no oversupply.[5] The Virginian Rail-

3. Interstate Commerce Commission, Finance Docket No. 2812; Construction of Extension by Virginian Railway, 79 I. C. C., 631.
4. New York Times, June 27, 1923.
5. Interstate Commerce Commission, Finance Docket No. 2812; Construction of Extension by Virginian Railway, 86 I. C. C., 27.

way was permitted to build the desired extension. The real issue in the case still remains to be decided. Has the Interstate Commerce Commission the legal right to attempt to prevent or to restrict overdevelopment in any industry? It is of little importance whether the Interstate Commerce Commission or some other body has that authority; but it should be vested somewhere. In view of the distress and chaos that have resulted from the free and unfettered development of the coal industry, a little more regulation, government or otherwise, might seem to be highly desirable.

The United States government has the opportunity to stop to some extent the expansion of coal-mining capacity by refusing to lease out for mining the coal lands of the public domain. It has been the government policy so far, however, to grant a lease if the company can establish the fact that it is capable of opening and operating a mine. Such a policy, tho it does bring royalties to the Treasury, would appear to be a short-sighted one, both from the standpoint of an industry already overdeveloped and from the standpoint of conservation of the resources for future generations.

Limited resources are not the only cause of the more regular operation of the European coal mines. In both Germany and Great Britain, either the output is carefully regulated or there is an outlet for the surplus production of the seasons of slack demand. In Germany the most effective agency in eliminating the seasonal fluctuations that would exist despite the pressure of output on reserves has been the coal syndicates. Tho the syndicates were formed primarily for the control of prices, they have aided in the stabilizing of output in at least two ways.

One method of controlling prices has been the restriction both of the total output and of the output of the

individual company. Since, in the domestic market, an operator can dispose of only a fixed amount of coal and at a price fixed in April for the following twelve months, his only possibility of increasing profits is in decreasing his mining costs, or in increasing output and exporting the surplus above his allotment for the domestic market. One method of decreasing costs is to work the mines at highest efficiency and capacity all the year round rather than seasonally in response to demand. Pressure is exerted on the coal merchants to force them to distribute their purchases evenly throughout the year, in order that the coal producer will not have the problem of storing the surplus coal during the slack season. One paragraph of the Rhenish Westphalian Coal Syndicate's contract of sale with merchant provides: "If merchants do not take up full quantities from March to August, the Syndicate is entitled to reduce by the same amount deliveries in other months." [6] Such a provision has made it necessary for the merchants either to provide for the storage of coal or to induce the large consumers to make their purchases during the season of minimum demand. It is a policy that has encouraged the storage of coal, not by the mine, but by the middleman or by the consumer.

Further, the Syndicate has tended to eliminate seasonal production by fostering the export of German coal, thus providing an outlet for the surplus output of the mines. Under the Syndicate agreement, there are no limitations either on the price charged for export coal or on the quantity exported. Frequently, the fixed price for the domestic market has been high enough to permit the producer to make substantial reductions in the price of coal for export and thus undersell British coal in

6. From testimony before Royal Commission on Coal Supplies, Great Britain, 1905, Part X, pp. 272–274.

foreign markets. It has been a frequent charge by German manufacturing concerns that the price of German coal is higher in Germany than in some of the nearby countries. Many witnesses before the British Commission on Coal Supplies (1905) testified to the fact that the German export trade in coal had increased tremendously since the formation of the syndicates.

No data are available for a comparison of regularity of output before and after the formation of the Rhenish Westphalian Syndicate, but contemporary comments on the industry indicate that one of the reasons for the formation of the Syndicate in 1893 was to bring about a stabilization of output. It is true that in the period since 1893 German mines have worked with great regularity — probably with greater regularity than can be found in any other large coal-mining country. Since 1901 the average working year of the Prussian mines has been 307 days, and no year in that period has fallen below 286 days.

In the United States, a strong coal syndicate with a policy of restriction of output and allocation of production to the participating operating companies might result in the elimination of the disastrous seasonal fluctuations in output. It would provide a rather drastic means of eliminating surplus mine capacity and surplus miners. But it is futile to discuss such a remedy, since, altho it has been suggested in times of stress by some of the operators, there is no possibility of its being applied now or for many years to come. The American attitude toward anything that savors of monopoly or restraint of trade stands in the way of the formation of any such syndicates as are common in Germany. The American coal industry must look, therefore, to other remedies than those applied so successfully in Germany.

The British coal industry has had almost as much

success as the German in eliminating the irregular operation of the coal mines, but the regularity of output is not the result of syndicates or monopolies, tho British law is not hostile to such organizations. There is little seasonal fluctuation in British coal output because the surplus of the seasons of slack domestic demand can be exported. Great Britain is essentially a trading nation, and coal was one of the earliest exports of importance.

The nature of British trade favors the export of coal. With the growth of manufacturing, exports have become more and more concentrated and imports more and more bulky. The majority of the ships bringing goods to England are forced to leave in ballast, for the machinery and cotton cloth occupy only a small part of the space necessary for bringing in raw cotton, wheat, and iron ore.

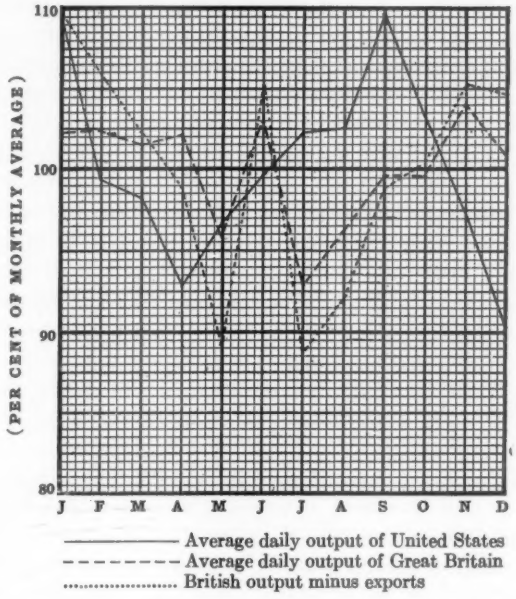
In coal, England has a ballast that is of value at the end of the voyage. With a profitable cargo certain on both legs of the voyage, freight rates to and from England are low, and British coal can be put down in foreign markets at a cost much less than coal from other countries with trade of a different character. It is this freight differential, due to the use of coal as ballast, that gives to Great Britain the first place as a coal-exporting nation.

Tho the effect of the halting of British coal exports cannot be stated exactly, the importance of exports in eliminating seasonal irregularities in the operation of British mines can be shown in a general way by subtracting from the coal produced each month the amount that is exported. Such data for 1923 are presented in Figure IV.[7] Between the high month and the low month there is a spread in the output index of 11.1 per cent. If the export coal is subtracted from each monthly

7. Curves constructed in the same manner as curves in Figure II.

FIGURE IV

EFFECT OF COAL EXPORTS ON REGULARITY OF OUTPUT IN GREAT BRITAIN, 1923


(PER CENT OF MONTHLY AVERAGE)
110
100
90
80
J F M A M J J A S O N D
Average daily output of United States
Average daily output of Great Britain
British output minus exports

output, the spread is 20.9 per cent. For comparison, the average monthly output of the United States for 1923 is added. The spread of the American curve is 19 per cent, almost exactly the same spread as the British curve without exports.

The United States can profit little more from the success of Great Britain in eliminating the irregular operation of mines than from the experience of Germany. The United States is not a coal exporter, and conditions are not favorable for any immediate and large increase in exports. Tho the United States mines annually about

twice as much coal as Great Britain, exports are only about one third as large. In 1913 the United Kingdom exported 76,700,000 tons of coal and sent out in addition 21,000,000 for use as bunker coal in ships engaged in foreign trade — a total of 97,700,000. In the same year, the United States exported 20,800,000 tons of bituminous coal and 4,900,000 of anthracite, and sent out as bunker coal 6,100,000 tons — a total of 31,800,000.

It is not sufficient to offer, in explanation of the relatively unimportant coal export trade of the United States, the statement that, with our great industrial development, most of the coal mined is required at home. With the existing mine capacity, the coal output of this country could be increased by at least 200,000,000 tons annually if that much coal could be disposed of profitably either within the country or in foreign markets. The United States exports so little coal simply because American coal cannot compete with British.

The American coal producer, it is true, possesses one advantage over the British producer: coal is mined more cheaply here than in the European countries. But most of this advantage is wiped out by the long rail haul to tide-water. In England most of the export coal is mined within 25 miles of the coast. The most accessible deposits in the United States are located inland more than 150 miles.

England has the further advantage of a market close at hand. The Baltic countries, Holland, France, Spain, and the Mediterranean countries are all countries with little or no coal of their own. To this group of markets goes more than 50 per cent of the British coal exports. All the countries adjacent to or near the United States are scantily populated. They have little or no industrial development. They are not important consumers of coal.

The superiority of Great Britain over the United

States as an exporter of coal rests more upon the freight rates from the two countries than upon any other factor. American trade has been the reverse of British trade. American exports have been bulky and imports have been concentrated. The bulk of the trade tonnage has moved away from the United States and not toward it. There is no demand for heavy cargo for outgoing vessels and coal cannot be exported as a revenue-carrying ballast. It must compete for cargo space, not with rock or sand as is the case in England, but with wheat, cotton, or lumber, and it must pay freight rates as high as the more valuable raw materials.

Table 2 is a comparison of the weight of exports and imports of the United States and the United Kingdom.

TABLE 2

WEIGHT OF BRITISH AND AMERICAN EXPORTS AND IMPORTS
(In millions of long tons)

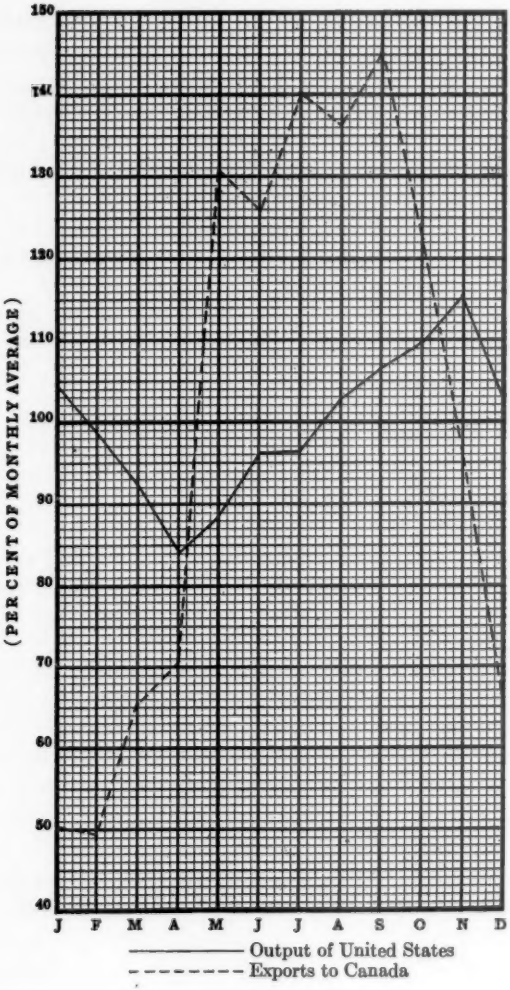
	United Kingdom *		United States †	
	1913	1919	1921	1921 (Excluding bulk oil)
Imports	54.5	39.0	36	18
Exports	93.2	47.6	58	52
Exports, excluding coal	16.5	9.1	34	28

* Statesman's Yearbook, 1921.
† American Geographical Review, XII, 425.

Canada is the only important coal customer of the United States. In 1913 she took 65 per cent of the total bituminous export and 83 per cent of the anthracite. The method of transport and the nature of the Canadian climate give to this trade the highest degree of efficiency as a stabilizer of mine operations. Most of the coal moves either across the Great Lakes or up the St. Lawrence. Since those waterways are closed by ice during the winter and early spring, the coal must be moved in summer and early fall. The greater part of the active season of the Canadian trade comes at the time of mini-

FIGURE V

RELATION OF MONTHLY COAL EXPORTS TO CANADA AND MONTHLY OUTPUT OF THE UNITED STATES, 1913



mum demand in this country, and some work is provided for the mines during the slack season. In Figure V the monthly bituminous output of the United States for 1913 and the monthly bituminous exports to Canada are compared.[8]

There are factors pointing toward both an increase and a decrease in Canada's import of coal. The population of the Dominion is increasing and there is a shift to manufacturing. Coal consumption will undoubtedly increase, but Canada is attempting to supply that increase and to replace at least a part of her imports with domestic coal. Reserves are large, second only to those of the United States, but the greatest part of the coal is located in the Prairie Provinces of Alberta and Saskatchewan, far from the centers of population; and the quality of the coal is poor. Of the total reserves in the two provinces, over 75 per cent is lignite and a large part of the remainder is bituminous coal of inferior quality. Some progress has been made in putting the lignite into useable form for industry. The handicap of the location of the fields has still to be overcome.

The shift that is occurring in the exports of the United States from raw materials to manufactured goods, and in imports from manufactured goods to raw materials, will alter eventually the coal-export situation. At present, British coal controls the South American markets. With the increase in the importation by the United States of nitrates, copper ore, iron ore, coffee, meat, and tropical products from South America, there should be a demand for a bulky material for the return voyage, and American coal should enjoy somewhat the same freight

8. The exports to Canada are taken from the Monthly Summary of Foreign Commerce of the United States, 1913. United States Bureau of Foreign and Domestic Commerce.

The curves in Figure V are constructed in the same manner as those in Figure II.

differential to South American markets now enjoyed by British coal.

Until American trade begins to resemble British trade in its balance in bulk of exports and imports, or until the mounting costs of production in British mines, where the cream of the deposits is approaching exhaustion, wipe out the advantage in freight rates enjoyed by British coal, the United States will not be an important coal exporter, and the ills of the coal industry cannot be remedied by disposing of the surplus output in foreign markets.

IV

Tho the American coal industry cannot benefit to any great extent from the experience and success of Germany and Great Britain, it need not resign itself to its present condition. Improvement is possible tho no single remedy can be recommended. Numerous remedies have been suggested for particular ills, but too little attention has been given to the effect of the remedies upon the industry as a whole. There has been no coördination of treatment. Organization is without doubt the first need of the industry. There should be an organization to diagnose, to recommend treatment, and to scrutinize closely all remedies before they are applied.

At the time of the appointment of the Harding Coal Commission, the writer made the suggestion that, in place of the temporary commission, a permanent commission, made up of representatives of miners, operators, and consumers, should be created.[9] The contention that a temporary commission would only collect information which would be relegated to government files and

9. See article on editorial page of New York Evening Post, November 9, 1922.

reports has been pretty well borne out. The Coal Commission amassed a huge amount of undoubtedly valuable material on the coal industry. Its term of office expired more than a year ago. None of the material has been printed by the government. A part has been made available through the mimeographed reports of the commission or through summaries of the reports in newspapers and trade journals. The remainder, a great mass of facts, can be consulted only in the files in the office of the United States Geological Survey in Washington. And what is even more significant, none of the recommendations of the Commission has been translated into law by Congress. Fortunately peace has reigned for several months in the coal industry, but if another disturbance should occur, the labors of the defunct Commission would be of little avail in quieting it. There would be, in all probability, a demand for the appointment of a new commission to meet the new emergency.

The need for a permanent commission is still urgent. Its organization would be the first step toward a real stabilization of the coal industry. The movement for the creation of the permanent commission or parliament should come, not from the government, but from those most closely connected with coal — the miner, the operator, the coal merchant, the large consumer, the general public. The commission should be appointed and supported by those interests and should be representative of them.

It should include representatives of the United Mine Workers of America, of the National Coal Association, of the railways and the iron and steel industry as two of the largest consumers, of some organization of the smaller consumers, of the Wholesale Coal Merchants' Association. Its exact size and composition and the equable distribution of representation among the groups

concerned can be determined only after much study. The operators and miners, it seems clear, should have a larger representation than any of the other groups because of their very direct interest in the industry.

The chairman of the commission should be an outsider not connected with any of the groups represented. He should possess a thoro knowledge of the coal industry, and with this knowledge he should combine a high degree of executive ability.

The organization of an industry under a commission or board is not a new and untried scheme. A coal parliament, or *Reichskohlenrat*, was created by an act of the German Reichstag in March 1919. This parliament has a membership of sixty members and includes representatives of the government, the mine operators, the miners, the large consumers, and the coal merchants.[1] To the parliament was given the general supervision of the coal industry. An agreement between miners and operators relative to wages or hours of labor must have the approval of the parliament before it becomes effective. The public, through the representatives of the consumers, has an opportunity to resist any policy that may result in unwarranted increase in the price of coal. When the Westphalian Coal Syndicate renewed its articles of organization in March 1922, the agreement had to be approved by the Reichskohlenrat. The parlia-

1. Kohlenwirtschaft Gesetz vom 23 Märs 1919 nebst Ausführungsbestimmungen und Ergänzungsgesetzen, Erläuterte Textausgabe von Oswig Lüttig. Heymann, Berlin, 1920. The Reichskohlenrat is composed of representatives of the following interests: 3 of the State, 15 of the mine operators, 15 of the miners, 1 of the operators of gasworks, 1 of the employees of gasworks, 2 of the technical mine employees, 1 of the commercial mine employees, 5 of the coal merchants, 1 of the employees in the wholesale coal trade, 2 of the operators of coal-consuming industries, 2 of the workers in coal-consuming industries, 2 of the small coal-consuming industries, 2 of the coöperative societies, 1 of urban coal consumers, 1 of rural coal consumers, 1 of the railroads, 1 of ocean navigation, 1 of inland navigation, 1 coal-mining specialist, 1 coal-research specialist, 1 steam-boiler specialist.

ment is consulted on all measures concerning the coal industry that may come before the Reichstag. It is, in short, the governing body of the coal industry. It also has its permanent investigating committees. One of the most important is the technical-economic committee. At the office of the Reichskohlenrat in Berlin, data on all questions relating to the coal industry are collected. An emergency in the coal industry does not necessitate the creation of a temporary commission to make a hurried investigation, for complete information is always available.

The German scheme could not be applied in its entirety in the United States. A parliament with so large a membership would probably prove to be too large and too cumbersome. It would probably not be possible to give to an American parliament the wide power possessed by the Reichskohlenrat. The relationship between government and parliament could probably not be so close. But the German scheme is not important for its details. Its important contribution is the emphasis on organization, and the recognition of the community of interests that exists in the industry.

The plan of organizing an industry under a representative board is not entirely new in the United States. Other industries have had chaotic conditions with which to contend. In the needle trades, for example, employment has been very irregular because of the seasonal character of the demand for clothing. Working conditions have been bad and hours of labor long. The sweatshop has not been stamped out completely. Strike has followed strike, and lockout has followed lockout. The employer has suffered almost equally with the worker. To meet this situation, agreements have been drawn up in the more important markets in many of the branches of the industry. Boards, representing manufacturers

and workers and headed by impartial chairmen, have been created. The scheme has met with a high degree of success.

Since the framing of the agreement between the men's clothing manufacturers and the Amalgamated Clothing Workers of America in the Chicago market in 1919, there has not been a single serious labor disturbance in that market.

The coal parliament here suggested is not identical with the other forms of organization that have been attempted. The scheme contains a number of new elements. The parliament differs from the German Reichskohlenrat in that it is not to be created by the government but is to come from the industry. The American citizen is too prone to rush to the government for aid every time he gets into economic difficulties. If the price policy of a large corporation suggests monopoly, he cries for anti-trust legislation and for prosecutions. If he happens to be a manufacturer, he clamors for a higher tariff whenever costs of production appear to be lower in some foreign country. There is a continuous demand for commissions to investigate or to control first one industry or public utility and then another. The demands, if all were heeded, would result in an endless multiplication of government officials and in much duplication of effort. A saner method of procedure would seem to be for those interested in the industry to find their own solution for existing difficulties.

There is another argument against a government commission, an argument of expediency. There is a strong prejudice among the coal operators against any government interference in the industry. This prejudice is based largely upon the experience with government control of the industry during the war period. It may or may not be justified, but any scheme that involves

government action would carry so heavy a handicap that it probably could not be introduced against the opposition of the operators.

The parliament also differs from any of the representative boards created in other industries of the United States in including not only workers and employers but consumers and middlemen. The middleman has come to be regarded as a sort of black sheep of the economic system, and numerous proposals for his elimination have been advanced. Whatever the merits of those proposals, we must consider conditions as they exist. The middleman is still a vital part of the coal industry and undoubtedly performs an important service. He exists for the smaller producer and the smaller consumer. The larger mining companies have selling departments as a part of their organization. The larger consumers, such as railroads and steel companies, own the mines from which they obtain coal.

Most of the bituminous coal, however, is produced by mines too small to maintain their own selling departments and is consumed by consumers too small to operate their own mines. In 1920, 52.6 per cent of the total output came from mines producing less than 500,000 tons annually, and only 25 per cent came from consumer-owned, or captive mines. No exact estimate of the percentage of total output that is disposed of through selling departments is available. It is probable that something over half of the output is marketed through coal merchants.

The coal merchant performs a valuable service. He is an expert merchant and the consumer has the service of a specialist in securing coal of a desired quality and at a fair price. The great majority of wholesalers aid in financing the mining operations, and, by granting credit, they finance the consumer. Through a coal merchant, a

producer of a small volume is able to dispose of his output as a part of a large volume.[2] In any scheme of representative control of the coal industry, a group performing such important functions and handling so large a volume of coal should certainly be included. Many of the decisions reached by the commission will necessarily affect the merchants, and their policies will undoubtedly have important influences on the industry as a whole. Indeed, some of the problems of the industry can be solved only through them.

The consumer, tho he is the support of any industry, has been ignored too often in dealings between capital and labor. We have come a long way from the day when industry seemed to be for capital alone and for its profit. The interest of labor is being recognized and labor is being given a larger and larger share in control. The policy of "the public be damned" has had to give way in the conduct of public utilities, but this same public, as a consumer, is still as the grain between the millstones. He is squeezed whether the pressure is exerted by manufacturer or by worker. In dealings between capital and labor, it is still a case of the consumer be damned. He has no voice in whatever agreements may be reached.

Tho the argument favoring the participation of the consumer in the control of industry in general is a strong one, it is even more convincing in the case of the coal industry, for in no other industry are the consumers so absolutely dependent. The coal industry is a basic industry. Its largest consumers (taking about 75 per cent of the total bituminous output) are manufacturing plants and railroads employing hundreds of thousands of workers. Any serious disturbance in the coal industry

2. "Coal Distribution in America," by C. S. Duncan, in The Black Diamond, August 25, 1923.

is bound to affect not only the householder, but also the operation of industrial plants, the return on the capital invested in those plants, the wages of the workers, and the consumers of their products. There are few people in the country who are not affected in some degree by every nation-wide coal strike. In such an industry, in which his interest is so vital, surely the consumer should have some voice.

The large consumers should be represented on the coal commission also because their experience undoubtedly can be used to the benefit of the industry. Their policy of purchasing has a direct bearing upon a most pressing problem, the problem of regularity of output. The problem cannot be solved without help from the consumers.

The coal commission would differ also from the boards created in other industries in being nation-wide. The clothing boards are limited to single markets. It is doubtful if the plan could succeed unless it were made to include the entire coal-mining industry of the country—certainly all of the bituminous industry. Tho over 60 per cent of the annual output comes from the three states of Pennsylvania, West Virginia, and Illinois, coal mining is widely scattered. In recent years nine states have reported annual outputs in excess of 10,000,000 tons and six others have reported between 5,000,000 and 10,000,000 tons. Twenty-three states have annual outputs of more than a million tons. Tho the industry is scattered, the problems of the different fields are closely related. All the larger markets are supplied by several fields, and this competition gives rise to problems that can be handled effectively only by an all-inclusive organization. The most serious problem in the coal industry is the problem of overdevelopment, which is nation-wide in its scope and which must be solved as a national problem.

The bringing together of the conflicting elements of the coal industry into a harmonious group may seem to be only a wild dream — an end highly desirable, but nevertheless unattainable. It will be brought about only after overcoming great obstacles, there is no doubt about that. The one favorable sign pointing to the ultimate adoption of such a scheme is the great need that exists. Some drastic action will eventually have to be taken.

Too long has bitter warfare been the traditional relationship between capital and labor. Enmity, hatred, suspicion are of too long standing to be easily forgotten. But until it is recognized that strike and lockout are as obsolete in the settlement of labor disputes as the stone axe and the feud in the settlement of disputes between individuals, and until the worker, the employer, the consumer, and the middleman recognize their common interests and all are given an effective voice in the conduct of the industry, there is little hope for improvement in the coal industry or any other.

Once the antagonism that has occupied so important a place gives way to a recognition of the community of interests in the industry, the greatest obstacle to its stabilization will have been removed. The formation of the parliament will then depend upon the degree of organization within the groups that are to be brought together. An organized industry cannot be built from unorganized parts. There must be organization of labor, of the operators, of the merchants, and of the consumers. Disorganization, or the absence of organization, has proved fatal in other attempts to bring together parts of an industry, even when the attempts have not extended beyond capital and labor. A number of recent negotiations between miners and operators have failed because of the ineffective organization of

one of the parties, usually the operators. The greater peace and stability of the anthracite field are attributed largely to the complete organization of the anthracite operators and miners.

In the needle trades, the success of the organization of the men's clothing industry in the Chicago market has been due to the practically complete organization of the workers and to the organization of a large part of the manufacturers. In the New York market, tho the workers were organized, it was impossible to create any effective machinery for the control of the industry because there was no representative organization of the manufacturers. Recently, a stronger organization of the manufacturers has been formed, and the industry is now duplicating in the New York market the machinery that has been so successful in Chicago.

In the coal industry, there already exists a strong nucleus of organization about which to build the parliament. In the anthracite fields, practically 100 per cent of the miners are members of the United Mine Workers of America. In the bituminous fields, about 60 per cent are members. Of all the coal miners, both anthracite and bituminous, about 75 per cent are organized.

The bituminous operators are organized in the National Coal Association. Its membership, tho it includes only about 25 per cent of the bituminous operators of the country, represents approximately 50 per cent of the commercial bituminous mine capacity. The attitude of the government toward combinations and associations has undoubtedly been a serious obstacle in the way of a more effective organization. There has been some change in this attitude in the case of the railroads. There should be a change in the case of the coal industry. The organization of the operators should be encouraged, not prohibited.

The coal merchants, both wholesale and retail, have national associations. The large consumers, especially the railroads and the public utilities, have some form of organization. The small consumers alone are without even the beginning of an organization. If it can be shown, however, that an organization is needed and that it would serve a useful purpose, little difficulty should be experienced in bringing it into being.

With such a nucleus of organized bodies, the parliament can be formed and can begin to function. It is the hope that it will so firmly establish itself and that its merits will be so evident, that the weight of opinion, both from the industry and from the general public, will insist upon its continuance and upon its being strengthened through a greater degree of organization of its component groups.

In any proposal to stabilize or control the coal industry, the question of the open and closed shop always presents itself. The advantages and disadvantages of unionized and non-unionized coal fields, and the effect of the unionization of all the fields upon regularity of output and mine operation, have already been discussed in these columns,[3] and need not be considered here. Since organization of labor is essential to the success of the parliament, it seems evident that the open shop is not compatible with the proposal. The coal fields must be unionized sufficiently to bring most of the mine capacity under the control of the parliament.

Unionization, however, does not mean necessarily the closed shop. It has been accomplished in other industries through the preferential shop; that is, preference is given to union labor as long as the desired quantity and quality of union labor is available. If it is not available, places may be filled by non-union workers. Before

3. M. B. Hammond, "The Coal Commission Reports and the Coal Situation," Quarterly Journal of Economics, August 1924, pp. 572–577.

the plan for the parliament is condemned because it presupposes the strengthening of the position of labor through the more complete unionization of the coal fields, it should be remembered that it also presupposes the strengthening of the position of the employers through a much stronger organization of the operators.

It has been pointed out in a previous paragraph that, if the parliament is to be created and if it is to have any prospect of success, there must be a strong organization of each of the groups represented. Through such organizations will come also the force necessary to put into effect the policies and decisions of the parliament. If the agreement establishing the parliament and defining its powers is framed by strong organizations of workers, operators, middlemen, and consumers, each group truly representative and competent to bind its members to the agreement, the machinery is provided for securing the coöperation of each group in the application of any policy that the parliament may decide to be for the best interests of the whole industry. Any failure to coöperate would be considered as an act of bad faith. Such, at least, has been the experience in other industries where the commission or parliament plan has been adopted.

The coal parliament, once created, will be concerned with the formulation of general policies for the industry and not with the solution of local problems. To handle local problems, local commissions could be created in each field or locality, constituted in somewhat the same fashion as the national commission, with representatives of all the groups interested in the local control of the industry. Through their closer contact with the industry, these commissions would be able to modify to meet local conditions any measures suggested by the national commission.

To formulate national policies, the coal commission must have complete and accurate information on every question that comes before it. To provide this information, a coal institute, corresponding to the technical and economic committees of the Reichskohlenrat, should be established as one of the organs of the commission. The institute will conduct investigations into all questions of common interest, whether they are questions of mine operation, labor conditions, wages, transportation, marketing, or coal consumption. The institute will recommend specific remedies for the ills of the coal industry, together with detailed plans for their application. Since the range of studies, necessarily, will be a wide one, the institute staff should include geologists, mining engineers, economists, and lawyers. The personnel need not be permanent since the problems will be continually changing.

In addition to the special investigations, an important function of the institute will be the collection and dissemination to the industry of statistical data on coal. The value of such data, regularly collected, has been recognized by other industries. Their collection has been encouraged by the United States Department of Commerce.

Since all the investigations of the institute must be thoroly scientific and without bias, it cannot owe allegiance to any of the separate elements of the industry. The financial support of the institute should be borne by all the elements. Its contact with the parliament should be through the chairman. The institute should be responsible to him alone. He would act as its director.[4]

4. The formation of a coal institute is now being considered by the coal operators and middlemen. It should not be confused with the institute here proposed. The operators' and coal merchants' institute is to be supported by those elements of the industry and is to investigate problems of primary interest to them. No matter how impartially its investigations were carried on, the findings of such a body would always be viewed with suspicion by the other elements in the industry.

It may be argued that a commission such as that suggested will concentrate too much power in one body, and that the big interests — the mine operators, the railways, the iron and steel industry — will have a strong enough representation to control the exercise of that power. It may be argued that the commission savors too much of monopoly. It must be borne in mind, however, that the representatives of the miners, the small consumers, and the retail merchants will act as a check on the larger interests. The policy of the operators as producers will not be, necessarily, the policy of the steel industry as a consumer. These divergent policies, supported by the smaller interests, should set up a system of checks and balances in the commission that will effectually prevent monopoly. The bugaboo should not be permitted to perpetuate the present chaos.

V

One problem, and probably the first, to which the coal commission and the coal institute should turn their attention is the halting of further overdevelopment. If the opening of new mines can be stopped for only a few years, capacity will be brought down to demand by the closing of exhausted mines without any other outside pressure or interference. The halting of overdevelopment will not be an easy task, however. The surplus reserves of coal in the United States cannot be placed under lock and key, to be forgotten until they are needed. They are open to any capital or business initiative that wishes to develop them, and the difficulty of placing a curb upon capital and business initiative has been pointed out. It may be possible to regulate the opening of new mines through the restriction of transportation facilities by the Interstate Commerce Commission, as was attempted in the Virginian Railway

case. Or it may be possible to create licensing machinery under the control of the Federal Trade Commission. Or, to meet the aversion of coal operators and business in general to government interference, it may be more desirable to place the restriction of transportation and the licensing machinery under the control of the permanent coal parliament. It will be the task of the parliament and the institute to conduct a much more thoro study of overdevelopment than has ever been made, both on the exact degree of development that exists and on methods of preventing it.

To hasten the reduction of capacity, some method of closing the surplus mines should be devised. But which are the surplus mines? Are they the new ones or the old ones? To decide that question and to decide which of the old mines or of the new mines should be closed, many technical and economic problems must be studied, a task for the parliament and the institute.

There is also the problem of diverting the surplus miners into other occupations. The shift must be made voluntarily. Through education and through drawing attention to the advantages of other occupations, the miners can possibly be encouraged to change. If workers can be discouraged from entering the ranks of mine labor for a time, — and the immigration laws will be an aid in such restriction, — the normal turnover of the miners will soon bring the numbers down to present needs.

Idleness of mine and miner may be greatly lessened by increasing the demand for coal as well as by reducing productive capacity. Since the demand for coal is largely an indirect demand, dependent upon the demand for articles into whose manufacture it enters, it would be difficult, if not impossible, to increase demand within a country. The only outlet for increased produc-

tion is in an increased export. The United States, for some time, at least, cannot be an important exporter of coal, but there is the possibility of some increase. The coal trade has been like much of the American export trade. Coal has been sold because the foreign countries have needed it and not because there has been any active effort to sell it. Customers have been lost, even when the price has been satisfactory, because their needs have not been ascertained and because there has been no care in grading the coal or in maintaining its quality. British exporting methods might be followed profitably. With a study of foreign markets, particularly in South America, the West Indies, and Canada, and with more attention to the quality of export coal, it is probable that exports could be increased sufficiently to aid the industry materially.

Coal exports might also be fostered by coal exchanges created by the parliament. The exchanges would limit trading to responsible buyers and sellers. During the war, it was a frequent complaint of the representatives of foreign governments and of foreign companies purchasing coal in New York that they could never be certain that the selling agents would complete their contract and deliver the quantity and quality of coal that had been purchased. The coal exchanges could also establish grades and standards similar to those in other commodity exchanges and rigidly enforce their observance by exporters. In time the reputation of American coal might become as firmly and as favorably established as the reputation of Welsh coal at present.

Until mine capacity and the number of miners have been reduced, or until demand has been increased, the irregular operation of the mines and the irregular employment of the miners will continue. In the meantime, some form of relief will be necessary. Probably the most

effective means of distributing output throughout the year is the storage of coal at the point of consumption during the seasons of minimum demand. To eliminate seasonal fluctuations, it would be necessary to store a comparatively small amount of coal. The Storage of Coal Committee of the American Engineering Council has stated that to stabilize the coal industry the storage of only 16 or 17 per cent of the annual consumption, or 80,000,000 to 85,000,000 tons, was necessary.[5] Such storage would involve a small increase over the coal already stored, since there were 56,000,000 tons in storage on September 1, 1923.

The quantity of coal that must be stored is so small that it could be stored easily by the large consumers, — the railways, the iron and steel industry, the large manufacturing plants, and the public utilities, — provided those consumers were convinced that storage is profitable. Storage has many evident advantages, but it is not certain whether they are offset by disadvantages. If coal is purchased in advance of consumption, capital is tied up. Space is required for its storage. Chemical changes may bring about deterioration, and there is the chance of fire. If any program of storage is to be successful, it must be demonstrated that it is profitable and not an act of philanthropy on the part of consumers. Improvements in method of storage are possible, and many technical and economic problems are yet to be investigated. Various groups throughout the country are attempting some of these investigations, but a more effective investigation could be carried on by the parliament, an organization nation-wide in its scope and in intimate contact with all the elements of the industry.

Coal storage should be encouraged, if it is shown to be profitable, but it should not be expected to cure all the

5. See Coal Age, July 10, 1924, p. 52.

ills of the coal industry. It would spread output evenly throughout the year, but, until capacity is reduced or consumption increased, there will continue to be idle mines and idle miners. With storage the miner would continue to work only 200 days per year on the average, but his idleness would be distributed through all the months and not be concentrated in late spring and summer.

The remedies so far proposed, while they will benefit the mine workers, will do so but indirectly and after the passage of a considerable length of time. Until they have been adopted and have become sufficiently effective to establish a close balance between mine capacity and coal consumption, employment will continue to be irregular. To aid the worker during the transition to the new system, the coal parliament and the institute should formulate and put into force some plan of insurance against involuntary unemployment.

Unemployment insurance would give relief to the miner during the periods of unemployment in the slack seasons. It should have even more important and far-reaching effects. It should furnish a strong incentive for the removal of the causes of slack seasons and unemployment, particularly if the operator and the consumer bear their share of the cost of the insurance. It should encourage the more even distribution of mine output over the year by the storage of coal at the mines or, preferably, at or near the place of consumption.

It should discourage further overexpansion. Overexpansion, it has been shown, is largely the product of the high profits arising out of seasonal demand. By regularizing mine operation, unemployment insurance should do much to eliminate those periods of high profits. It should also act as a positive check on expansion. If it is realized that every worker added to an existing

mine or to a new mine must be provided for after the period of activity has ended,-capital will hesitate to rush into the industry without assurance that there is a permanent need for new mine capacity. And, lastly, unemployment insurance, by distinguishing more sharply between the high-cost and low-cost mines, may even prove to be the solution of the difficult problem of eliminating the surplus mine capacity.

In conclusion, it may be stated that the coal industry does not face a hopeless task in the effort to bring order out of chaos. Overexpansion can be stopped gradually, surplus mines can be closed, and surplus miners can be shifted to other industries. Demand can be increased to some extent. Output can be more evenly distributed throughout the year. But these changes cannot be expected in an industry in which the conflict of interests is so strongly emphasized. They can be attained only in an industry in which there is a recognition of the community of interests between the component elements. To secure such a recognition, the first step necessary is the bringing together of all the elements of the coal industry into a representative body and the placing of the control of the industry in its hands.

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INDUSTRIAL PROFITS IN 1917 [1]

SUMMARY

The theory that business profits, in the long run, tend towards equality between different industries is qualified by the admission that, at any given time, variations exist. Such variations in 108 industries are examined for the year 1917. — I. Source of the data: Treasury tax returns for 26,477 corporations, 242. — II. Variation in the earnings of these different industries and trades, and in eleven major groups of industries into which they fall, 243. — III. Range between individual firms within given industries and groups, 253. — IV. Variations in the average invested capitals per corporation, 259. — V. Earnings of the largest corporations, 261. — VI. Effect of taxation on profits. Summary, 264.

It has long been held that business profits, over a period of time, tend towards an equality as between the several branches of industry. As a qualification to this principle, however, it has been recognized that at any *given* time the earnings of certain industries or trades may be higher than those of others. One thing will not be produced if something else promises to pay more, but the shifting of productive energies and resources cannot in most cases be accomplished immediately: much capital is fixed, much organization relatively immobile. In any one year, therefore, variations in earnings are to be expected.

But about all we know is that the variations exist. We have had practically no information [2] concerning

1. I am indebted to the editors of System, and especially to Mr. Wheeler Sammons, for permission to utilize materials which were compiled as the basis of articles prepared for that magazine. The investigation upon which the present study is based was undertaken at Mr. Sammons' suggestion.

2. In railroads and other public utilities, and also in banking, there have been published certain figures for earnings and invested capital; but these few industries remain almost the only ones which have been

their distribution or size. That they are to be expected is admitted; that they should be examined is seldom stated. The present paper examines one limited period, but for that period gives data over a wide range of industries. There are here presented figures for the earnings and invested capitals of 26,477 firms, in 108 different industries, for the calendar year 1917. It is not suggested that the data show anything beyond the conditions during that obviously abnormal year. As need hardly be said, similar information covering a series of years would be necessary in order to furnish inductive verification (or disproof) of the current doctrine concerning the equalization of profits.

I. Source and Nature of the Data

The Senate Document, entitled *Corporate Earnings and Government Revenues*,[3] comprises a "letter from the Secretary of the Treasury transmitting [to the President of the Senate] . . . in response to a Senate Resolution of June 6, 1918, certain facts, figures, data and information taken from 1916 and 1917 income and excess profits tax returns of corporations." It contains figures for

at all comprehensively investigated. Jean Paul Muller's volume, Financial Statistics (1919), presents the rates of return earned upon both net worth and capital stock by about 250 industrial and mining corporations, from 1911 to 1919. To this list were added (in a 1920 issue) another 250 companies. The 500 firms thus enumerated are classified into four main groups, each of these in turn being subdivided into from three to five industries. J. E. Sterrett, in the American Economic Review, March 1916, analyzes the audit reports of 158 corporations for years ending either in 1912, 1913, or 1914, and compares the rates of return with those allowed certain regulated industries by state public utility commissions. No classification of the 158 corporations by industries or trades is, however, attempted. David Friday, in Profits, Wages and Prices (1920), discusses comprehensive data for 1917 with respect to the earnings of a few broad industrial fields, e. g., transportation, manufacturing, agriculture, but again none bearing upon the rates of profit in particular industries or trades.

3. Senate Document No. 259, 65th Congress, 2d Session. Ordered printed July 5, 1918.

31,500 individual corporations which earned 15 per cent or over on their capital stock in 1917. The figures are listed separately for each corporation, the corporation being indicated by a code number, and no totals or averages of any kind are included in the volume. Sixteen items are given for each corporation: the capital stock, invested capital, net income, income tax, excess-profits tax, and net income after being taxed, together with certain ratios between these several individual figures. From this collection of material the figures summarized in the accompanying charts and tables have been compiled.[4] The 108 industries analyzed, together with the number of firms in each, are listed in Table I.[5]

II. Variation between Industries and Groups

The ten most profitable trades or industries [6] all show earnings of over 39 per cent upon their invested capitals, respectively. At the head of the list stands Brokers, classed by trades, comprising 102 firms which averaged a net return of 60.33 per cent (arithmetic mean). The second most profitable field, Steel Plants and Rolling Mills, earned 59 per cent. And the third highest, Bolts

4. For suggestions in connection with the technique of compilation, I am indebted to Professor Horace Secrist, Director of the Bureau of Business Research, Northwestern University, and Mr. R. D. Cahn, Chief Statistician, General Advisory Board, Illinois Department of Labor; while for suggestions connected with the interpretation and presentation of the data, I am indebted to Professor F. W. Taussig.

5. The present investigation excludes a few of the industries given in the volume, such as agriculture and timbering; there are also excluded all in which tax returns for fewer than 25 corporations are reported, as it was felt that for the purpose at hand their inclusion did not warrant the expense of compilation.

6. The term "profits" in this paper is used as synonymous with the term "per cent of net income to invested capital" as it appears in the Treasury report above cited. This includes all earnings above the expenses of operation (which expenses include managerial salaries) and — subject to certain limitations — above the interest paid on borrowed capital and funded debt. It does not include interest upon owned capi-

TABLE I. — EARNINGS, ETC., OF 26,477 CORPORATIONS IN 108 INDUSTRIES FOR THE CALENDAR YEAR, 1917 [1]

Industry, pursuit, or trade	(1) % net income to invested capital [2]		(2) % total tax to net income	(3) % net income to invested capital after tax	(4) Number of firms in group	(5) Average capital invested (in 1000 dollars): arith. mean
	arith. mean	median				
Banking and brokerage institutions						
1. Commercial banking	11.80	14.78	9.81	10.73	1,617	145
2. Commercial paper, etc.	20.12	20.36	19.55	16.18	36	259
3. Mortgage loans	13.30	16.90	12.07	11.69	67	114
4. Trust companies	11.29	17.50	10.26	10.13	44	486
5. Savings banks	18.85	18.81	14.48	16.12	33	101
Entire group	14.48	15.16	13.47	12.53	1,797	151
Business pursuits and personal service						
6. Insurance brokers	30.12	34.50	16.98	25.00	112	164
7. Real estate brokers	9.76*	18.40	10.66	8.72	148	150
8. Brokers (trades)	60.33*	38.13	28.51	43.13	102	92
9. Builders	18.14	23.50	18.77	14.74	67	83
10. Capitalists	8.96*	15.73	9.49	8.11	754	286
11. Contractors	21.31	24.54	21.00	16.84	803	90
12. Laundries (dry cleaning)	16.52	19.87	14.24	14.17	287	65
13. Garages, taxicabs, etc.	24.32	28.64	16.64	20.27	381	34
14. Hotels	19.24	23.33	20.07	15.38	199	155
15. Restaurants	27.96	32.89	21.46	21.96	117	47
16. Theatrical, etc.	24.47	31.93	19.54	19.69	290	54
17. All others, N. E. S. [3]	36.05	28.13	19.29	29.09	71	41
Entire group	14.29*	23.36	16.00	12.00	3,331	128
Chemical and allied industries						
18. Crude chemicals	31.44	29.77	30.07	21.98	104	286
19. Druggists preparations	52.44*	31.14	43.47	29.64	62	343
20. Dyestuffs, extracts, etc.	34.43	32.50	26.52	25.30	31	186
21. Oils, vegetables, etc.	44.59*	26.25	33.68	29.57	50	177
22. Paints and varnishes	24.84	22.35	23.65	18.97	95	205
23. Patent medicine compounds	25.89	25.00	23.60	19.78	39	182
24. Soaps, lubricating greases	22.40*	20.44	20.98	17.70	55	541
25. All others, N. E. S.	33.66	27.50	31.58	23.02	89	151
Entire group	32.73	27.17	31.43	22.44	525	258
Food and food preparation						
26. Bread, etc.	25.22	25.74	23.24	19.35	217	135
27. Canning: fruits, etc.	30.34	31.96	29.17	21.49	239	102
28. Canning: fish, etc.	45.55	42.50	39.64	27.49	53	208
29. Confectionery	25.58	24.62	23.73	19.51	265	120
30. Flour, feed, etc.	32.82	27.23	26.16	24.23	494	202
31. Meat packing, etc.	20.09	22.50	21.60	15.75	102	336
Entire group	29.31	27.22	24.42	21.57	1,370	168
Iron and steel industries						
32. Forging and foundry	31.43	27.42	30.77	21.75	203	126
33. Steel plants, etc.	59.00*	33.33	43.67	33.23	43	1,966
34. Automobile and auto parts	24.11	27.13	18.36	19.68	124	1,424

[1] Only corporations whose individual tax returns indicated net incomes of 15 per cent or over on capital stock are included in the compilation.

[2] Asterisks affixed to arithmetic means indicate substantial deviations from the respective median figures.

[3] "Not Elsewhere Specified"; a miscellaneous group of firms.

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	arith. mean	median	% total tax to net income	% net income to invested capital after tax	Number of firms in group	Average capital invested (in 1000 dollars): arith. mean
35. Bolts and nuts	52.53*	33.50	42.32	30.29	40	344
36. Brass goods	33.85	26.36	31.55	23.17	75	326
37. Castings, etc.	41.61*	33.26	34.90	27.08	195	482
38. Electrical mchy., etc.	27.39	29.22	27.09	19.97	140	311
39. Engines, steam, gas, etc.	28.79	26.88	29.49	20.30	36	330
40. Hardware	23.87	24.23	25.83	17.70	65	480
41. Heating and ventilating	23.88	22.76	22.88	18.42	88	298
42. Hoisting machinery, etc.	30.21	32.92	29.89	21.17	38	369
43. Mill machinery	36.60	29.44	32.04	24.87	45	261
44. Mining machinery	27.24	25.50	27.39	19.78	38	223
45. Boilers, oil tanks, etc.	30.92	30.75	29.38	21.83	66	269
46. Plumbing supplies	28.76	23.85	30.94	19.86	73	303
47. Pumps	27.49	27.92	26.30	20.26	32	382
48. Stoves, all classes	20.24	21.15	19.07	16.37	55	286
49. Tin cans and tin ware.	42.29*	28.33	36.58	26.82	27	348
50. Tools, machine	35.41	35.00	27.17	25.78	111	514
51. Tools, mechanics	31.11	27.00	29.39	21.96	39	180
52. Iron and steel prod., N. E. S.	32.73	26.16	32.08	22.23	258	183
53. Printing machinery	30.65	26.25	26.72	22.46	32	233
Entire group	33.80	27.74	31.26	23.23	1,823	418
Leather and leather goods industries						
54. Boots and shoes	23.10	23.47	20.97	18.26	150	351
55. Tanneries — hides	22.99	23.33	21.77	17.98	51	541
Entire group	23.07	23.37	21.25	18.17	201	399
Paper, printing, bookbinding, etc.						
56. Blank paper	19.39	21.50	23.60	14.81	32	1,287
57. Cardboard, box material	28.03	26.25	26.56	20.59	238	185
58. Paper goods, N. E. S.	30.15	28.03	29.20	21.34	116	387
59. Book and job printing	18.82	20.23	16.19	15.77	190	72
60. Bookbinding, etc.	17.85	20.71	16.55	14.89	91	134
61. Labels, tags, etc.	23.23	24.29	22.61	17.98	33	125
62. Lithographing	20.29	21.07	18.66	16.50	59	185
63. Newspaper, etc.	19.21	20.99	20.12	15.35	212	141
64. Photo. engraving	24.94	25.31	21.11	19.67	60	65
Entire group	23.68	22.82	24.50	17.88	1,031	199
Special manufacturing industries						
65. Bedding, mattresses, etc.	25.27	21.94	22.40	19.61	79	282
66. Building construction	30.57	28.00	28.54	21.84	51	177
67. Ice manufacturing	17.38	18.30	14.89	14.79	96	77
68. Instruments, scientific	27.18	26.07	24.14	20.62	36	790
69. All other rubber goods	21.83	24.69	21.67	17.10	44	532
70. Tobacco manufacturing.	24.05	19.60	25.06	18.02	83	1,169
71. Toys, etc	19.31	19.29	16.03	16.21	35	174
72. All others, N. E. S.	24.35	28.27	24.34	18.42	175	321
Entire group	24.30	23.24	24.02	18.46	599	417

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	arith. mean	median				
Textile Industries						
73. Cotton manufacturers	20.93	22.50	19.42	16.87	31	1,011
74. Gray or brown unfinished print cloths	24.22	23.50	22.73	18.71	45	958
75. Gray or brown unfinished sheetings	25.97	27.88	24.02	19.73	74	972
76. Cotton spinners, etc.	27.81	29.03	25.89	20.61	66	443
77. Combed yarns, fine, etc.	28.69	30.23	28.14	20.61	86	328
78. Dyers, mercerizers, etc.	30.16	31.88	28.35	21.61	53	360
79. Silk throwing	44.89*	30.45	22.59	34.74	37	159
80. Garment mfg., N. E. S.	28.69	25.39	25.99	21.23	296	138
81. Hats, caps, scarfs, etc.	20.97	27.00	18.61	17.07	39	480
82. Hosiery and knit goods	28.55	26.91	26.58	20.96	279	239
83. Shirts, collars, and cuffs	26.62	26.88	23.58	20.34	27	188
84. Wool and worsted mfg.	38.56	36.00	34.29	25.33	37	595
85. All others, N. E. S.	27.02	27.50	26.00	19.99	53	357
Entire group	27.42	26.96	25.60	20.40	1,123	357
Trading						
86. Department stores	20.83	21.68	20.79	16.50	310	293
87. Merchandise jobbers	28.85	26.93	26.77	21.12	459	131
88. Purchasing and selling agts.	31.08	30.51	27.50	22.53	1,305	117
89. Apothecaries, druggists	22.27	23.75	18.82	18.08	423	102
90. Bookstores, etc.	23.42	24.74	20.58	18.59	183	93
91. China, glassware, etc.	26.51	26.50	23.36	20.31	34	74
92. Clothing and dry goods	26.37	24.20	23.16	20.26	2,057	109
93. Coal, wood, and fuel	23.42	22.87	22.67	18.11	1,696	96
94. Feed stores (hay, etc.)	30.47	32.45	25.92	22.57	446	56
95. Furniture, carpets, etc	17.72	19.83	15.33	15.00	571	101
96. Groceries, provisions, etc.	25.77	25.88	23.15	19.80	1,630	125
97. Liquor stores	25.70	25.68	24.45	19.41	284	114
98. Miscellaneous	20.51	21.97	20.25	16.36	263	117
99. Paints, oils, varnishes	25.68	22.91	23.27	19.70	851	104
100. Tobacco	28.36	27.76	21.34	22.30	130	62
101. Building material	20.56	21.30	18.27	16.80	259	103
102. Supply stores, general	27.69	24.06	26.18	20.43	2,659	87
103. Warehousing	27.56	34.39	20.42	21.93	509	83
104. All others, N. E. S.	32.98	28.58	30.11	23.05	198	97
Entire group	25.86	24.66	23.84	19.70	14,267	106
Transportation and public utilities						
105. Light and power co's.	12.05*	17.86	11.64	10.64	95	686
106. Steamship properties	39.54	33.65	32.46	26.70	186	664
107. Telephone & telegraph co's.	10.64*	15.95	9.23	9.65	90	3,934
108. All others, N. E. S.	24.97	25.00	23.44	19.12	39	85
Entire group	17.46	22.50	21.50	13.70	410	1,333

and Nuts, earned 52.53 per cent. The complete list of these ten industries is given in the following table. It will be noted that six of them — Fish Canning, Steamship Properties, and the several iron and steel fields — are industries which one would expect, *a priori*, to have received a substantial stimulus under war conditions:

	Per cent
Brokers, classed by trades	60.33
Steel Plants and Rolling Mills	59.00
Bolts and Nuts	52.53
Druggists Preparations	52.44
Fish Canning	45.55
Silk Throwing	44.89
Oils and Vegetables	44.59
Tin Cans and Tin Ware	42.29
Castings	41.61
Steamship Properties	39.54

The ten least profitable lines, on the other hand, all present earnings of less than 18 per cent. The lowest rate of return is that of Capitalists, including Investors, Speculators, etc. They average but 8.96 per cent (arithmetic mean). It is to be noted, however, that this pursuit, like Brokers, classed by trades, referred to in the first list, comprises commercial activities of a fiscal rather than physical character; its traffic consists

tal; e. g., no part of a dividend upon preferred stock was to be construed as "interest paid," nor was a corporation allowed to reckon interest upon inventories, etc., as an element of cost.

With respect to funded obligations, it was provided that interest might be paid upon an "indebtedness not in excess of the sum of the . . . paid-up capital stock plus one-half of [the corporation's] interest-bearing indebtedness . . . then outstanding." For a discussion of this arbitrary limitation, see R. H. Montgomery, Income Tax Procedure — 1918, pp. 285–287, and C. J. Bullock, "The Federal Income and Excess-Profits Taxes" in the Report of the Committee on War Finance of the American Economic Association (1918). The inequalities which this limitation was capable of causing — and which would have reflected themselves in our present data — were softened by a Treasury ruling which permitted certain corporations, for purposes of tax returns, to include parts of their permanent indebtedness under invested capital. See Professor Bullock's report, p. 18.

in the transfer of titles to goods and not their manufacture, transport, or actual market distribution. This is also true of the pursuit listed as Real Estate Brokers, the return in which is second lowest — 9.76 per cent. In these three trades, therefore, the per cent return on invested capital is perhaps not a very indicative figure, at least so far as concerns comparison of these three lines with the other 105 industries and trades. The return of a broker, capitalist, or speculator is perhaps more a result of the exercise of quick wits, shrewd guesswork, and the occasional willingness to take "long" chances (or the absence of these qualities) than it is a return upon "capital invested," or capital invested *plus* the exercise of "entrepreneurial ability." The complete list of the ten industries of lowest return is as follows:

	Per cent
Capitalists, including Investors, etc.	8.96
Real Estate Brokers	9.76
Telephone and Telegraph Companies	10.64
Trust Companies	11.29
Commercial Banking	11.89
Light and Power Companies	12.05
Mortgage Loans	13.30
Laundries (Dry Cleaning)	16.52
Ice Manufacturing	17.38
Furniture, Carpets, etc. (Stores)	17.72

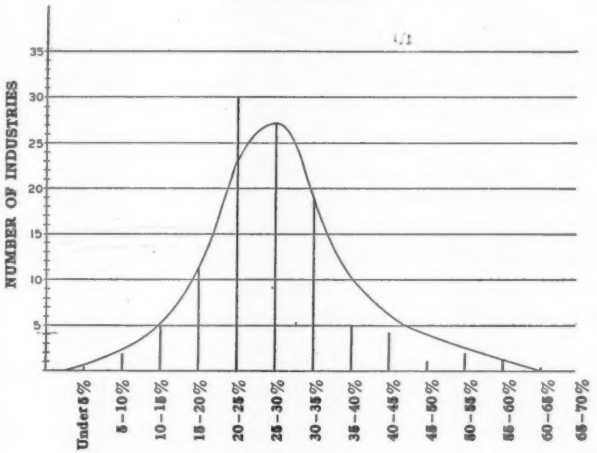
We may note here the absence of any iron or steel products industries, and the presence, not only of banking and financial institutions, but of two such highly regulated industries as Telephone and Telegraph companies and Light and Power companies. The inability of these industries to raise appreciably their charges for service, coupled with the necessity, however, of their paying increased prices for labor and materials, accounts for the relatively low rates of return which they received. For, in a short period of rapidly fluctuating prices, a

regulated industry is in much the same position as the recipient of a fixed income; altho its aggregate revenues may increase, its revenue per unit of traffic or service usually remains, for the time being, the same. And as prices rise, operating expenses tend — in spite of the fact that a greater volume of service may be furnished — more than to encroach upon the increased revenues.

The arithmetic mean for the 108 industries [7] is 24.75 per cent. We shall at times use this figure as a loose

FREQUENCY DISTRIBUTION

PERCENTAGE OF NET INCOMES TO INVESTED CAPITALS FOR 108 INDUSTRIES, 1917



ARITHMETIC MEAN RETURN

standard with which to compare one or another of the several industries. But it is hardly an "average" in any sense of "typical." As the above chart indicates, 30 industries earned between 20 and 25 per cent, while

7. That is, the return on the aggregate capitals of all 26,477 firms included in the investigation.

27 industries earned between 25 and 30 per cent. This gives, taking these two groups together, 57 industries which earned between 20 and 30 per cent. But these 57 make up only a little over half the entire number under consideration; the 51 remaining industries all earned either over 30 or under 20 per cent. It is true, however, that if the next group on the scale (the industries earning 30–35 per cent) be included with the two groups just mentioned, a total of 88 industries falls into a class earning between 20 and 35 per cent; and these 88 trades do comprise by far the greater number of the industries under consideration. Where any particular industry stands in earnings can be ascertained from Table I.

That the results are not greatly different when the medians are taken can be seen from an examination of that table. The highest return becomes 42.50 instead of 60.33 per cent and the lowest return becomes 14.78 instead of 8.96 per cent. Thus the limits are substantially narrower, and the alignment is somewhat affected; but the discrepancies are still marked and numerous. To facilitate examination of Table I, asterisks have been affixed to the arithmetic mean figures under the heading (*1*) *% Net Income to Invested Capital, arith. mean*, whenever they differ markedly from the medians.

What now as to the earnings of certain kindred lines taken as a whole — fields which we may call "major industrial groups"? Here again among the arithmetic means there exist very considerable differences, altho the range is not so great as in the case of the 108 individual industries. Instead of a spread of 51 per cent (from the lowest of the 108 arithmetic means, 8.9, to the highest, 60.33), the alignment by these eleven major groups of industries shows an extreme disparity of about 19 per cent. When the medians are taken, however, the disparities are less. The alignment is as follows:

	Arithmetic Mean	Per cent
1.	Steel	33.80
2.	Chemicals	32.73
3.	Foods	29.31
4.	Textiles	27.42
5.	Trading	25.86
6.	Special Mfg.	24.30
7.	Printing	23.86
8.	Leather	23.07
9.	Transportation	17.46
10.	Banking	14.48
11.	Bus. Pursuits	14.29*

	Median	Per cent
1.	Steel	27.74
2.	Foods	27.22
3.	Chemicals	27.17
4.	Textiles	26.96
5.	Trading	24.66
6.	Leather	23.37
7.	Bus. Pursuits	23.36*
8.	Special Mfg.	23.24
9.	Printing	22.82
10.	Transportation	22.50
11.	Banking	15.16

It will be noted that the arithmetic means for the first three groups stand well above the figure 24.75 per cent, while the last three are well below it. It will be noted further that the alignment is little altered when the median is taken, altho the absolute percentages are somewhat different from those for the arithmetic mean. The asterisks call attention to the one group the median of which altered markedly its position in the list. Here certain of the larger corporations evidently earned rates of return lower than those enjoyed by many of the smaller firms. Of this subject in general (how the earnings of the very large establishments compare with those of smaller ones) something will be said below. But in explanation of the discrepancy between median and arithmetic mean in the group at hand, we may here point out that the interquartile range of net incomes to invested capitals in Business Pursuits and Personal Services was 22.53 per cent (15.76–32.27), while the arithmetic mean, as we have noted, was only about 14 per cent. The benefits of war — if there be any such — perhaps redounded so strikingly to the smaller corporations in this group because it was they who had the relatively larger latent productive capacities of which to take advantage. The larger organizations in such lines

as Hotels, Garages, or Restaurants frequently could not obtain sufficient capital (in the physical sense) to erect new units. But the smaller firms could perhaps often greatly enlarge their capacities (relatively) by acquiring and converting parts of the structures in which they were housed; for example, a small hotel or restaurant could readapt ramshackle rooms, etc. This explanation, however, like many in this paper, is offered simply as tentative; it may or may not account in any substantial measure for the difference between median and arithmetic mean figures in the group under consideration.

We may now return to our previous list of the ten most profitable individual lines,[8] and ask to which major industrial groups they belong. An examination of Table I discloses that all of these ten highest industries come from groups engaged in manufacturing or transportation, rather than mercantile or commercial, operations.[9] Of the ten lowest lines,[1] however, all but three belong to financial, mercantile, or commercial groups, rather than to manufacturing or transportation.[2] Here again, the explanation possibly lies in the facts concerning physical ability to meet an increased demand for goods. Manufacturing and water transport are activities each capable of being considerably "sped up" under pressure, both as regards the attainment of somewhat greater output from existing units, and as regards the erection of new units. And upon the obtaining of capital goods to make extensions in these fields, fewer restric-

8. See table on p. 247.

9. Four belong to Iron and Steel Industries, two to Foods and Food Preparations, one to Business Pursuits and Personal Services, one to Chemical and Allied Industries, one to Textiles, and one to Transportation and Public Utilities.

1. See table on p. 248.

2. Three belong to Banking and Brokerage Institutions, three to Business Pursuits and Personal Services, two to Transportation and Public Utilities, one to Trading, and one to Special Manufacturing Industries.

tions were placed by the Government's system of priorities than in the case of many pursuits of a commercial or mercantile character. Further, in these fields there are usually no appreciable limits set by the localization of the market. In mercantile lines, however, especially in retail trading, the market is mainly local, and in certain trades even this market, altho remaining the same in area, was curtailed by the voluntary restrictions of various kinds which were placed upon consumption. This curtailment, in certain cases, doubtless affected more the prosperity of mercantile firms dealing in the commodities concerned than it did that of the factory. The latter frequently could make other products, or else produce the same product for overseas use.[3]

Of the three industries in this low list which do not belong to mercantile, financial, or commercial pursuits, one is Ice Manufacturing. The two others are public utilities, the distinctive characteristics of which have earlier been remarked.

III. The Range between Individual Firms in Each Industry

It is thus seen that, while the various branches of industry may, over a long period, hold out equal expectations of gain to persons possessed of equal abilities and equal capitals, they by no means actually afforded it during the year in question. War exigencies resulted in a rapidly shifting price level and in distorted demand

3. It is of interest to note that the variation between the different industries within the Trading group is much less marked than in almost any of the ten other major fields of industry. The Trading field includes 14,267 companies, a little over half of our entire number. Of the 19 industries making up this group, all but four earned returns (arithmetic means) lying between 20 and 29 per cent; while even for none of these four did the rate of earnings exceed or fall below those limits by more than 4 per cent. (See Table I, column (1), Percentage Net Income on Invested Capital, arithmetic mean.)

and supply schedules. The speculative elements thus induced resulted in substantial variations in the profits of different industries. Did, however, the earnings of individual firms within each given industry vary as markedly?

They varied even more so. In almost every industry or trade included in the list, some firms are seen to have earned profits at only a moderate rate, others good "fat" profits, and still others profits seemingly "beyond the dreams of avarice." From under 5 to over 1000 per cent on invested capital runs the range of this discrepancy in the earnings of the lowest and the highest firms in some of these 108 industries. In each of 93 of the 108 industries, there were at least five firms which made 40 per cent or over; and in 76 of these 93 industries, there were also some firms which made under 10 per cent. In 43 of the 93, there were five firms or more per industry whose earnings fell below 15 per cent, while those of the five highest firms in each case remained at 40 per cent or over.

In many instances, these discrepancies undoubtedly are largely nominal. Because of the operation of the excess-profits tax, a number of firms, for example, "wrote up" patents or formulæ which had previously been carried on their books at much lower figures. Other firms which possessed perhaps equally valuable formulæ or copyrights, however, were unable legally to do this, having paid for these assets by means of stock rather than cash.[4] There resulted discrepancies between the "invested capitals" of corporations possessing practically equivalent assets — inequalities in valuation which cannot but be reflected in our figures. There is no way of telling how frequently this has taken place; but it seems highly unlikely, taking 26,477 firms of such widely

4. See Bullock, Report, pp. 20–21.

diversified types as are here included, that occurrences of this character can wholly account for the variations.

In 20 of the 108 industries, the discrepancies between the constituent firms were not nearly so striking. In them, there were no firms earning under 15 per cent. But in each of these 20 industries, there were some firms earning under 20 per cent, and also some firm or firms earning over 55 per cent. And in every single one of the entire 108 industries, there were, while not five firms, at least some firm or firms which earned over 30 per cent, and at the same time some firm or firms which earned under 20. In 82 of the industries, at least five firms in each made 50 per cent or over. In 29 industries, there were five firms in each which made 100 per cent or over. And in the major group Trading, which comprises 19 separate lines, there were 326 firms making over 100 per cent — a number equal to approximately 2.5 per cent of the total number of corporations in the group. But in the major group Banking and Brokerage Institutions, it is of interest to note that there were no firms at all which earned 100 per cent, and only 9 which earned in excess of 50 per cent, a number equal to approximately ½ of 1 per cent of the total number of firms in the group.

For a better picture of the discrepancies between the individual firms in certain industries, as well as of the variation between the several industries themselves, we may examine the interquartile ranges within the individual trades or groups. In some instances this range is large, in others small. It varied from 5.71 per cent, in Savings Banks, to 73.47 in Brokers, classed by trades.

It is of especial interest to examine the interquartile ranges for the ten industries of highest return; and, further, to compare them with those for the industries of lowest return. The figures for the ten industries of highest net return are as follows:

Industry	Return (arith. mean) (per cent)	"Interquartile range" (per cent)	(per cent)
Brokers, classed, etc.	60.33	73.47	(26.58–100.05)
Steel Plants	59.00	19.37	(25.63– 45.00)
Bolts and Nuts	52.53	29.17	(23.75– 52.92)
Druggists Preparations	52.44	24.75	(20.88– 45.65)
Canning: Fish, etc	45.55	52.75	(28.50– 81.25)
Silk Throwing	44.89	12.89	(21.88– 34.77)
Oils and Vegetables	44.59	29.15	(18.98– 48.13)
Tin Cans, etc.	42.29	18.00	(22.00– 40.00)
Castings, etc.	41.61	27.40	(23.10– 50.50)
Steamship Properties	39.54	27.02	(22.67– 49.69)

* The amount of the range is shown first; the limits of the range are then shown in parentheses.

It will be noted that the lowest interquartile range of these ten lines occurs in Silk Throwing. But even here, where the limits of the range are 21.88–34.77 per cent, the returns enjoyed by all of these center firms are considerably below the arithmetic mean for the industry (44.89). Evidently in such data as are here at hand, the earnings expressed by the interquartile range indicate far more accurately "average earnings," in the sense of profits made by the typical firms, than does the arithmetic mean or even the median (which in the case of Silk Throwing is 30.45). Compare, for example, Silk Throwing and Tin Cans and Tinware. Both earned about the same return on their aggregate invested capital, in fact, Tin Cans and Tin Ware earned about 2 per cent less (42.29, as against 44.89). Yet the interquartile range of firms in Tin Ware made from 22.40 to 40 per cent, while in Silk Throwing, this middle group made only from 21.88 to 34.77 per cent. In Tin Ware, some of the highest members of this middle class of firms earned within about 2 per cent of the aggregate return of 42.29 for the industry; in Silk Throwing, the highest return to any member of the interquartile range was still 10 per cent below that for the industry as a whole.

Similar anomalies could be pointed out for other industries, where the interquartile ranges in each case indicate that the middle half of firms may or may not include any corporations earning as much as the average return for the entire industry. Or, in some instances, a number of the middle firms may earn *more* than the average return. In Castings, one of the ten highest industries listed above, we have a situation in which the interquartile range runs from 23.10 to 50.50 per cent, while the return for the industry as a whole is only 41.61. To many foundries which were in a position quickly to expand their outputs, the war-demand for metal products evidently brought large fortunes.

If now we take the ten industries of lowest profits, we find that the interquartile ranges are considerably narrower than for the ten of highest return. In the latter industries, only two of the interquartile ranges were of less than 18 per cent. But in the industries of lowest return, eight out of the ten disclose ranges narrower than this. The complete list of figures for the ten lowest industries is shown in Table II.

For major groups of industries, the interquartile ranges are in general narrower than for many of the individual trades. There exist, however, considerable differences between them: the narrowest range, in Banking and Brokerage Institutions, is 8.35 per cent, while the widest, that in Textiles, is 28. Table II contains the complete list.

One final word before leaving this subject of the variations between individual firms within each industry or group. In scrutinizing the relatively high rates of return enjoyed by many of these "profitable" companies — those which seem to have earned profits "beyond the dreams of avarice" — one serious qualification must be borne in mind. The data at hand, be it repeated, are

TABLE II

Interquartile Ranges of Per cent Net Income to Invested Capital, for the Ten Industries of Highest (Arithmetic Mean) Return [1]

(Amount of range shown first; limits of range shown in parentheses)

Industry or trade	Interquartile range
Brokers — classed by trades	73.47 (26.58–100.05)
Steel plants and rolling mills	19.37 (25.63– 45.00)
Bolts and nuts	29.17 (23.75– 52.92)
Druggists preparations	24.75 (20.88– 45.65)
Canning: fish, etc.	52.75 (28.50– 81.25)
Silk throwing	12.89 (21.88– 34.77)
Oils and vegetables	29.15 (18.98– 48.13)
Tin cans and tin ware	18.00 (22.00– 40.00)
Castings, etc.	27.40 (23.10– 50.50)
Steamship properties	29.02 (22.67– 49.69)

Interquartile Ranges...for the Ten Industries of Lowest (Arithmetic Mean) Return

Industry or trade	Interquartile range
Capitalists, incl. speculators, etc.	18.39 (6.58– 24.95)
Real estate brokers	19.95 (9.43– 29.38)
Telephone and telegraph companies	8.62 (11.25– 19.87)
Trust companies	8.50 (13.25– 21.75)
Commercial banking	8.22 (11.33– 19.55)
Light and power companies	11.10 (12.65– 23.75)
Mortgage loans	11.25 (11.25– 22.50)
Laundries (dry cleaning)	13.72 (15.07– 28.79)
Ice manufacturing	11.03 (13.31– 24.34)
Furniture and carpet stores	12.00 (15.00– 27.00)

Interquartile Ranges...for the Major Industrial Groups

Group	Interquartile range
Banking and brokerage institutions	8.35 (11.44– 19.79)
Leather and leather goods	12.28 (17.85– 30.13)
Printing and bookbinding	15.09 (16.70– 31.88)
Special manufacturing industries	15.46 (17.13– 32.59)
Textiles	15.68 (20.51– 36.19)
Trading	17.04 (18.05– 35.09)
Foods and food preparations	19.37 (19.13– 38.50)
Iron and steel industries	20.01 (19.99– 40.00)
Transportation and public utilities	20.33 (16.06– 36.39)
Chemical industries	21.92 (19.33– 41.25)
Business pursuits and personal services	22.53 (15.76– 37.27)

[1] See heading and note, Table I.

for but a single year. And the net returns here indicated represent merely the ledger balance of the profit and loss account in the case of each corporation. This is quite a different thing from the actual pocketing of distributed earnings by shareholders. As an accounting concept, such profits constitute income; but they may not, from the economist's point of view, mean the acquisition of any real wealth on the part of entrepreneurs to whom they accrue. Said Professor Bullock, in his report on the Federal income and excess-profits taxes, made in 1918: "It is to be observed that book profits, in times of expansion and inflation, are not the same as realized profits. . . . Events may yet prove that in not a few cases our income and excess-profits taxes are imposed upon income that can never be realized and upon profit that will yet turn into loss." [5] The events of 1920–22 fully justified this prediction. Except for some few firms, such as the Hickey-Freeman and Dennison Manufacturing companies,[6] most of the concerns which had greatly expanded their businesses when prices were high sustained severe losses as prices fell.

IV. Variations in the Invested Capitals of Industries and Groups

Another matter of some interest in a comparison of the profits of these industries and major groups concerns the average capital invested per establishment. Our data here are inadequate, in that we have calculated only arithmetic means and not medians. Yet where only a measure of broad differences is sought, the comparison may perhaps possess some validity.

5. Pp. 47–48.

6. For an account of the methods by which these firms averted "turning profits into losses," see the chapter by N. I. Stone, "Methods of Stabilizing Production of Textiles, Clothing and Novelties," in Business Cycles and Unemployment (National Bureau of Economic Research, 1923).

The industry of largest invested capital per firm [7] is Telephone and Telegraph Companies, with an average of approixmately four million dollars per corporation ($3,934,406). Next highest is Steel plants and Rolling Mills, with an average investment of about two millions ($1,965,965). The complete list of the ten industries of largest invested capitals is as follows:

Telephone and Telegraph	$3,934,406
Steel Plants and Rolling Mills	1,965,965
Automobile and Automobile Parts	1,424,481
Blank Paper	1,287,422
Tobacco Manufacturing	1,169,241
Cotton Manufacturers	1,011,368
Unfinished Sheetings	971,820
Unfinished Print Cloths	958,479
Scientific and Professional Instruments	789,519
Light and Power Companies	686,223

The ten industries with the firms of lowest average invested capital are:

Garages, Taxis, and Livery	$33,657
Business Pursuits, N. E. S.*	40,626
Restaurants	46,651
Theatres and Picture Shows	53,546
Food Stores	56,635
Tobacco — Including Supply Stores	61,811
Laundries (Dry Cleaning)	64,910
Photo Engraving and Engraving	65,036
Book and Job Printing	72,478
China and Glassware Stores	74,467

* "Not Elsewhere Specified"; a miscellaneous group of 71 firms engaged in Business Pursuits and Personal Services.

The arithmetic mean for the invested capital of all 26,477 firms, in all 108 industries, is $182,616. This, of course, is an "average" only in the same sense as the

7. The words "firm" and "establishment" are here used as synonymous with "corporation," altho some of the corporations included comprise more than one company, and many undoubtedly operate more than one physical unit of plant. The "average invested capitals" here discussed thus represent merely arithmetic means per reporting corporation, and should be taken to indicate financial magnitudes rather than the relative sizes of production units.

arithmetic mean return of 24.75 per cent before cited, and can be used but loosely. What the average capital is in any particular industry may be ascertained from Table I.

Are the ten industries of highest invested capital per corporation, we may now ask, also industries of relatively high general profits? The answer is clearly in the negative. Only one of them — Steel Plants and Rolling Mills — earned above 27.18 per cent. Six of them earned only from 20.93 to 27.18 per cent, while the three others earned less than 20 per cent. The ten industries in which the invested capital per firm was smallest, on the other hand, in the main earned profits either at about the average rate of 24.75 per cent, or else at a higher level. Four of these ten earned above 27.18 per cent, four more made from 24.32 to 26.51, while only the remaining two earned under 20 per cent.

The variation among the average invested capitals of the major groups, tho not so great, is also substantial. The lowest investment per firm is in Trading, the 14,267 members of which averaged a capital of $106,421. The highest capital per corporation is in Transportation, with $1,333,382. Figures for all 11 major groups follow:

Trading	$106,421
Bus. Pursuits and Pers. Serv.	128,012
Banking and Brokerage Institutions	150,948
Foods and Food Preparation	168,235
Paper, Printing, Bookbinding, etc.	198,910
Chemical and Allied Industries	257,705
Textile Industries	357,092
Leather and Leather Goods Industries	399,084
Special Manufacturing Industries	417,300
Iron and Steel Industries	418,025
Transportation and Public Utilities	1,333,382

V. Earnings of the Largest Corporations

It is frequently asserted that the largest companies earn profits at a much higher rate than do the smaller ones. Large-scale enterprise is associated, on the one

hand, with huge output and low costs of operation; and on the other, in the minds of many persons, with "good prices" and monopolistic practices. In contrast with the first of these viewpoints, however, it is sometimes urged that, while plants of a certain size are clearly more efficient than plants of lesser capacity, there are nevertheless in many industries — perhaps in every industry — certain other magnitudes of physical, administrative, and corporate organization beyond which it does not pay to go. It is of considerable interest, therefore, to inquire how the earnings of the very largest firms in each of our 108 industries compared with both the average return on the capital of the entire industry, and with that enjoyed by the median firm. Here again, our data are not conclusive as to any long-run tendencies; they simply show, subject to limitations of the sort already indicated, what happened during the year in question.

In each industry, it has been ascertained which five firms possessed the largest individual invested capitals, and the returns for each of these firms, respectively, have been compared with the arithmetic mean and the median for the industry. The results show that these large firms did *not*, on the whole, earn profits at a higher rate than either the arithmetic mean or median figure for their industries. Some earned more, many of them earned about the same, most of them earned less than these percentages. Here is a picture of the distribution:

(1) In 76 out of the 108 industries, three or more of the five largest firms all earned *less* than the arithmetic mean for the industry;

(2) In 73 out of the 108 industries, three or more of the five largest firms all earned *less* than the median;

(3) In only 32 out of the 108 industries, did three or more of the five largest firms earn returns *equal to or exceeding* the arithmetic mean;

(4) In only 35 out of the 108 industries, did three or more of the five largest firms earn returns *equal to or exceeding* the median.

In five industries, all of these five largest firms earned less than the arithmetic mean, and in 17 industries, all of them earned under the median. In only one industry did the five largest firms all earn returns equal to or exceeding the arithmetic mean, while in only two industries, did they earn as much as, or more than, the median figure.

Some of the industries have been analyzed beyond the first five firms, and examined for the returns of the smallest firms as well. But the results obtained seem to indicate that there is so little correlation, in general, between the size of corporations and their rates of profit that it was not deemed worth while to assemble and present the results. The figures for one industry, however, Cotton Manufacture, will be given, to show the clearly inverse correlation which there exists.

In this industry are 31 reporting corporations. The arithmetic mean for the industry is 20.93 per cent, the median 22.50 per cent. Nine of these 31 firms, or slightly less than one third, earned returns over 25 per cent, while six earned under 18 per cent.

Let us take the nine firms which earned over 25 per cent. The average invested capital for the industry is $1,011,368. Of these nine, all but two have invested capitals of *under* this amount — capitals all less than $1,000,000 each. Four have capitals of $500,000 each, or under; while two have capitals of less than $200,000 each.

Take now the Cotton Manufacturers with the largest invested capitals. There were eight of them, with individual capitals of over a million dollars. All but two of them earned less than the median figure of 22.50 per cent. Five of the eight earned less than 20 per cent.

Thus Cotton Manufacturers illustrates vividly, and in extreme fashion, that it cannot be said, for 1917 at least,

that "the largest firms earn the biggest profits." A $6,080,491 corporation in this industry earned 15.56 per cent, and a $2,130,853 corporation earned 16.01; while an $80,000 company made 25 per cent, and a $500,000 company made 38.92.

VI. Effect of Taxation

We may finally ask how did taxes on the varying profits in these 108 industries affect the alignments? Most firms paid a goodly part of their earnings to the government; and as the excess-profits tax was levied progressively,[8] it might be expected that such taxation would have leveled earnings greatly, both within each line, and as between the several lines and groups.

As a matter of fact, no substantial leveling resulted. The industry remaining most profitable after taxation earned 43.13 per cent net; while the industry that was least profitable after the tax earned only 8.11 per cent. The ten highest industries before being taxed remained, with one exception, the ten highest after being taxed. The ten that were lowest before taxation were also, with one exception, the ten least profitable industries afterwards. In other words, the excess-profits taxes were high, but not so high as to penalize earning power to such an extent as would wipe out relative differences.

From the earnings of the industries as a whole—representing all of the 26,477 firms — the Government took just one fourth (25.07 per cent) through taxation. This reduced the rate of return on their capital as a whole from 24.75 to 18.55 per cent. But the amounts

8. On incomes "not in excess of fifteen per centum of the invested capital for the taxable year," 20 per cent was taken (after allowable deductions); while on incomes of more than this amount, the rates rose from 25 per cent to a high point of 60 per cent on incomes "in excess of thirty-three per centum of such capital." For the computation of invested capital, see Montgomery, op. cit., p. 573.

taken under the progressive scale varied from 9.23 per cent of income in Telephone and Telegraph to 43.67 in Steel Plants and Rolling Mills. The percentage of income taken from any particular industry or group may be seen in Table I.

A summary statement upon these figures can be little more than a review of the facts. Earnings as between the different industries did not show very much tendency to conform to each other or even to any approximate figure. The rates of profit made by the individual firms within each industry differed even more widely. And in most industries, the large outstanding firms, instead of earning more than average profits, made less than the rate of return prevalent in the industry to which they belonged.

How far do these data indicate that such is the situation in years other than 1917? In no way whatever. The quite marked discrepancies found to exist in 1917 may in part have been due to inherent differences in the earning capacities of the several industries and trades; or they may have been due almost wholly to the industrial and commercial upheaval which accompanied the military conflict. Such phenomena as shifting price levels and swollen inventories make it entirely impossible to say.[9] To further investigations, covering not one year, but a series of years, therefore, must we look for proof or disproof of any such assumptions.

For private investigators, the expense of conducting

9. Such factors as the differences in risk, attractiveness, etc., which may exist between the several branches of industrial pursuit, have not been considered in this discussion. In so far as they do exist, they may operate in such manner as to make returns (measured in terms of percentage upon invested capital) in different industries unequal; but so little is actually known as to their exact effects that it has seemed impossible here to take them into account, especially since our data are only for a twelve-months period.

such analyses annually, in all the detail with which they ought to be made, is practically prohibitive. But it is a task to which the Treasury Department, or some other branch of the Government, or an endowed research bureau, might well devote itself. Could such compilations be made, the accruing gains to economic science would doubtless be considerable. For while what is true "in the long run" may often *not* be characteristic of the "short run," it nevertheless must be granted that what is persistently true of short periods must also hold for phenomena of longer duration. After all, the long run is merely a succession of short runs; and if we would be sure that we fully understand the one, we ought also know the facts concerning the other.

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MONETARY THEORY AND MONETARY POLICY: SOME RECENT DISCUSSIONS

SUMMARY

I. Introduction. — II. Analyses of post-war monetary experience. The purchasing-power-parity approach: Keynes, 268. — III. The foreign-exchange approach: Nogaro, 275; Nogaro's criticisms of Cassel's doctrine, 277. — IV. The approach through the budget situation: Rist, 280; further conclusions, 284. — V. Future monetary policies: Cassel, 286; Keynes, 287; Nogaro and Rist, 291. — VI. Conclusions. The data inconclusive; interpretation a matter of individual choice, 293. Monetary reconstruction: budget equilibrium; devaluation; return to the unregulated gold standard, 298.

I

WITHIN the past year three books of major importance have appeared, each dealing with the relationships between money, prices, and the foreign exchanges: Professor Rist's *La Déflation*, Professor Nogaro's *La Monnaie*, and Mr. Keynes's latest work, *Monetary Reform*.[1] All three make some examination of the painful history of the period since the armistice, and all attempt to draw from it conclusions that will be useful in solving the world's monetary problems. They are of especial interest just now, because the last six months have probably marked the beginning of a new phase in the post-war financial reconstruction. The Dawes plan has been put into operation, the French budget situation begins to give definite promise of stability, the prospects for an early return of the pound to parity are

1. J. M. Keynes, Monetary Reform (American edition: New York, 1924, Harcourt, Brace); B. Nogaro, La Monnaie (Paris, 1924, Giard); C. Rist, La Déflation en pratique (Paris, 1924, Giard).

good; and, most important of all, the excess American gold — the accumulation of which has, however unavoidably, so long impeded European monetary restoration — is beginning to drain out. The volumes just referred to represent the crystallization, from certain points of view at least, of experience in the *preceding* phase of reconstruction, from 1919 to 1923 — experience that must inevitably be drawn upon in working out the practical programs of the next few years.

The three books offer three substantially different interpretations of the course of events since 1918, and therefore suggest three different methods of approach to the problem of restoring the world's currencies. It will be most expedient to examine the various interpretations of past events first, and only then to turn to the constructive recommendations for future policies; for these last are wholly oriented by each writer's antecedent analysis. At one extreme, stands the "purchasing-power-parity" approach, represented here by Keynes; at the other the foreign-exchange approach, represented by Nogaro. Professor Rist's views, which have elements in common with both of the others, occupy a perhaps unintended middle ground.

II

First, the purchasing-power-parity doctrine. This doctrine, sufficiently familiar, was originally developed during the war — or rather, revived — by Professor Gustav Cassel.[2] It has undergone various revisions at

2. These revisions are brought together in Cassel's latest book on the subject. See G. Cassel, Money and Foreign Exchange after 1914 (1923). The first complete formulation of the purchasing-power-parity doctrine seems to have been made by an English writer of the early Bullion-Controversy period, Wheatley. See N. J. Silberling, Financial and Monetary Policy of Great Britain, Quarterly Journal of Economics, May 1924, pp. 415–418.

Cassel's hands, however, and in Mr. Keynes's most recent book these revisions are pushed forward vigorously. Some three major points are involved. First, — a modification of the older doctrine which it will suffice merely to mention, — the assertion of an intimate connection between relative degrees of inflation and relative changes in prices, in different countries, is now abandoned. Second, the presumed relationship between money, credit, and prices is stated in terms quite unlike those of the rather simplistic quantity-theory which Cassel implicitly postulated some years ago.[3] Finally, and most important of all, the purchasing-power-parities themselves are now calculated, not on the basis of relative *current* prices, but on the basis of relative deviations from a *previous* state of assumed "equilibrium" in international trade — such as might be supposed to have existed before 1914.[4] And these parities are regarded as merely "normative" with respect to the exchanges, not as short-run determinants.

Keynes's general analysis of the relation between money and prices is avowedly taken from Pigou and Marshall, tho it also suggests Hawtrey. Prices are made to depend on the composite of the relationships between some four factors, which are or may be mutually independent. The factors are: the number of monetary units in circulation; the reserve ratio of the banks; and the amounts of their "real balances," or consumption-units (based on standard articles of expenditure), that the public choose to keep in cash, or in the banks.[5] Thus, if these items be designated respec-

3. See Cassel, op. cit., pp. 28–30.

4. Ibid., pp. 140–142, 154–156.

5. Changes in these balances, Keynes finds, are often more important, as the source of changes in prices, than are changes in the first two items; a proposition which he bears out by an ingenious computation with respect to the English situation in 1920 and 1922. For the general argument see, in his Monetary Reform (cited above), pp. 81–92.

tively by the letters n, r, k, and k′, and prices by p, then:

$$p = n\,(k + rk').$$

This formula has the great advantage that it shows where pressure can be applied most effectively, to correct price fluctuations. But it is a fair question, I think, whether it will show this at the really critical time, *in advance* of substantial price change. In seeking an index of such potential pressure, the type of approach suggested by Hawtrey, in his work on Currency and Credit, is perhaps more useful: namely, the consideration of changes in money incomes. Moreover, a formula of this sort is presumably intended to apply only to comparatively stable conditions. It says nothing of the effect, so heavily stressed by certain writers, of the foreign exchanges upon prices.[6] Presumably we should regard it, not so much as a generalization from post-war experience as an attempt to provide a theoretical foundation for the reform proposals advanced later in Keynes's book.

Then, rather putting aside this examination of purely internal conditions, Keynes turns to the foreign exchanges and the purchasing-power-parity doctrine. He declares that the purchasing-power-parity doctrine is

6. With respect to the situation in cases of extreme currency depreciation, Keynes makes two interesting observations. First, severe inflation leads to an increase in the velocity of circulation of money, and this increase may become so great as to be more the cause of the accompanying rise in prices than is the increase in money itself. In this lies much of the explanation of the rise of German, Austrian, and Russian price levels in such grotesque disproportion, since 1918, to the increase in the volume of money (pp. 47–69). Second, however bad the depreciation may be, as long as the currency continues in use at all, a certain minimum "real" value will always remain in circulation. It was this fact, consciously utilized by the Soviet government, that enabled both Russia and Germany to keep on raising substantial revenues by successive inflations of an apparently worthless currency; that is, by an inflationary "turnover" tax (p. 62).

faced with two important difficulties. One is the necessity of allowing for costs of transportation, taxes, and the like, in calculating the parity itself. This difficulty he finds can be overcome, however, — as does Cassel, — by basing the calculation on a supposed prior state of equilibrium. The other difficulty, also recognized by Cassel, is much more serious: the problem of how to treat goods and services that do not themselves enter international trade.[7] For this Keynes adopts Cassel's solution, just indicated. But he admits that the purchasing-power-parity, *when calculated from a prior equilibrium*, is a true parity only under certain conditions: namely, if labor and capital are mobile as between export and domestic industries; if the "equation of exchange" in international trade has not altered; and if changes in prices are due to monetary causes alone. That is, a change in the relation between export and domestic prices will, to that extent, invalidate the doctrine.[8] This conclusion is then applied to the course of events in the past few years, by a comparison of the actual exchange rates with certain calculated parities. In the trade of England, France, and Italy with the United States, Keynes finds that the levels of the exchanges have been consistently, tho on the whole slightly, below the calculated parities. He therefore concludes that the "equation of exchange" has shifted slightly against the first-named countries; but that this shift has been unimportant, in the determination of the actual exchange-rate fluctuations, as compared to the effects of *monetary* disturbances. In Germany, however, the pre-war equilibrium was radically altered, and

7. The attempt to escape this difficulty by stating the parities in term of "international" prices alone, as Keynes points out, makes the theory a rather bromidic truism.

8. Ibid., pp. 105, 106.

the alteration in the "equation" has probably been very significant.[9]

Keynes summarizes his position, with respect to the purchasing-power-parity theory, as follows. He declares that the essence of this theory, considered as an explanation of the exchanges, is to be found "in its regarding internal purchasing power as being in the long run a more trustworthy indicator of a currency's value than the market rates of exchange, because internal purchasing power quickly reflects the monetary policy of the country, which is the final determinant." That is, the purchasing-power-parity — like the gold parity before the war — provides the equilibrium-point "about which the short-period movements of the exchanges fluctuate"; the parity being itself governed by *internal* money, credit, and price conditions, in the absence of a persisting change in the basic economic relationships between countries.[1] It will at once strike the reader of Keynes's pages, however, that he is distinctly noncommittal on the vital question of the mechanism by which these adjustments work themselves out. From the passages just quoted, we should infer that prices, through the balance of trade and payments, govern the exchanges; yet in the same paragraph Keynes implies that, under certain conditions, the exchanges will themselves alter the price-parity. The explanation, of course,

9. Ibid., pp. 108–116. The "equation of exchange" in international trade is presumably designed to indicate the relation between the quantity of imports that a nation receives and the quantity of exports that it must send out in payment for the imports. The term, used in this sense, has appeared only in the last two or three years. The "real ratio of international exchange," used by other writers, involves the same idea. See the recent controversy between Keynes, Beveridge, and others.

1. Ibid., pp. 105, 106. Also see p. 116. Just how short the "short-period" movement is, however, is not indicated here. Elsewhere, it seems to cover everything from day-to-day up to, and including, seasonal fluctuations. See Cassel, in the volume already cited, pp. 156 ff. On Cassel's contradictory views of the mechanism of adjustment, see Ibid., pp. 143, 144, 184, 185.

is that no one short formula can be made to embrace all the complications of the actual post-war phenomena.[2]

This reduction of purchasing-power-parities to a merely "normative" and rather long-run relationship to the exchanges is, I am sure, a move in the right direction, and one which will arouse little opposition. But the attempt to base these parities themselves on deviations from a *previous* state of (assumed) equilibrium, in international trade, is quite another matter. It seems to me both dubious on grounds of theory, and futile with respect to its concrete result. In the first place, there seems to be no scientific reason for calling the pre-war state of international trade any more truly an "equilibrium" than its present state; and there is no present prospect — nor is it especially desirable — that the world's trade will ever return to the pre-war terms. In the second place, the reference to a previous state of equilibrium necessarily involves a calculation of the *subsequent* variation in the "equation of exchange"; a concept the working value of which is itself yet to be demonstrated.[3] The more accurate the allowance made

2. Two other points in Keynes's discussion of the exchanges should not pass without comment. One is his stress on seasonal factors as an important explanation, in the absence of stabilization, of exchange fluctuation; with political speculation assigned a minor rôle, except in such unusual cases as the speculative long-time investment in German marks. (Ibid., pp. 116–123). The other point is his brilliant and novel analysis of the forward exchange market and its possibilities. (Ibid., pp. 125–151.)

3. As a theoretical concept, the "equation of exchange" is both suggestive and significant, for it enables us to express — conceptually — the relation between the "real cost" of a country's imports, and the "real value" of those imports to her. But as a practical measuring rod, it involves difficulties. Some of them, such as changes in relative internal prices, and in the composition of the exports, Cassel and Keynes have already suggested; and these can to some extent be allowed for. But the most important objection, especially at the present time, is not so easily met: namely, how shall we allow for international loans, and other invisible items in the "equation"? A net subtraction or addition will restore imports and exports to a pecuniary equilibrium; but we are then left hopelessly at sea, if we attempt to compare quantities or units of

for this variation, the closer will the estimated parities come to actual current price-ratios between countries. Why, then, bother with all this preliminary circumambiency? Granted budget equilibrium, and a reasonably sane banking system, current price-parities will establish a workable (long-time) norm of the exchanges, while in the absence of such equilibrium and such sanity they are useless: they become liable themselves to indefinite alteration, *in consequence* of the fluctuations of the exchanges.

One other comment must be made on Keynes's work. On the whole Keynes, like Cassel, reaches his analytical conclusions by general reasoning, not by the close study of continuous statistical data. For example, the tables and diagrams of the London-New York and other exchanges do not, to the impartial eye, reveal more than a general consonance in the movements of price-parities and the exchanges. It is impossible to say that either consistently precedes the other, let alone saying that it causes the other's variations; and there is no particular empirical evidence of a "normative" tendency. Furthermore, the amplitudes of the two sets of fluctuations are quite different.[4] The statistical data presented do

exports with quantities or units of imports. A general picture of the situation can doubtless be secured by a more or less arbitrary pro-rating of the "invisible" excess; but such a procedure will hardly be accurate enough to permit the calculation of a true norm of the foreign exchanges, except in very long-run terms indeed. And as an index of the more or less favorable position of a country with respect to international trade, a comparison of such quantities has, of itself, only a supplementary value; supplementary, that is, to other sorts of evidence.

4. The only explanation for these discrepancies that Keynes gives is that the "equation of exchange" has shifted. (Ibid., p. 108.) But we should expect this to be a gradual process, not one producing immediate and constantly varying effects. Rather, the explanation must in large part lie in the speculative discounting, by the exchange markets, of the general financial and political situation — especially with respect to the less stable currencies. It must be added that at another point Keynes himself minimizes the importance of this kind of speculation: see Ibid., pp. 122, 123. One suspects, however, that he is here thinking primarily of the English markets alone.

not contradict the purchasing-power-parity doctrine, but on the other hand they fail to provide a conclusive verification. They corroborate the opposite doctrine, which treats internal prices and purchasing powers as being primarily a resultant, equally well. Cassel and Keynes must therefore be regarded as resting the main weight of the argument in favor of their conclusions on reasoning antecedent to the statistical data. And these data themselves are primarily confined to the cases of moderate depreciation. The more extreme cases, such as Germany or Russia or even Austria, receive only fragmentary attention.

III

The purchasing-power-parity approach constitutes one extreme in present-day interpretations of the relation between money, prices, and the foreign exchanges. The other extreme is outlined by Professor Nogaro, who explains the question of depreciation and stabilization primarily in terms of the exchanges, rather than of internal conditions. We shall find, however, that the differences between his point of view and the other are less pronounced than might have been expected, and often due simply to difference in the problems set up for solution. His general doctrinal position is as follows.

In dealing with the relations between money, credit, and prices, Professor Nogaro has in all his earlier publications been an irreconcilable opponent of the quantity theory. But he now admits its substantial validity under at least two sets of conditions, one hypothetical, the other actual. The first arises when a closed market exists. Nogaro finds that the quantity theory is then valid at a given moment of time. The situation, that is, is "static." The second, of greater practical significance, arises when the increase in the quantity of money

is so rapid, and so great, that prices are forced up beyond the level of any possible increase in production. With respect to this *excess* rise in prices, the quantity theory explanation is again valid. With respect to small or slow variations in the amount of money, however, Nogaro rejects the quantity theory entirely: he holds that such changes are taken up by changes in the volume of production.[5] Finally, he finds that a *rapid fall* in prices usually *precedes* the decline in the quantity of money; a proposition which is supported by evidence from the course of events since 1914.[6]

Nogaro then turns to the theory of the foreign exchanges, but here again he does not attempt to draw up a universally valid formula. If the increase in the quantity of money is rapid, this increase may itself be the cause of exchange depreciation. But usually the sequence runs the other way: *from* exchange depreciation *to* internal depreciation, and to an increase in the quantity of money in circulation.[7] In the latter event, the immediate explanation of the exchange depreciation itself is in part to be found in the state of the balance of payments. But "psychological" factors also enter: speculation, anticipation of political or monetary changes, and so forth.[8] These various conclusions Nogaro supports by an examination of the more conspicuous facts in the post-war experience.[9] In France,

5. Nogaro, La Monnaie, pp. 170–172, 202–204. This last proposition is reminiscent of an enlightened French Mercantilist, François Forbonnais.

6. Ibid., pp. 232–243.

7. Ibid., pp. 174–192, and ff.

8. Ibid., pp. 192–195. With respect to the monetary history of the nineteenth century, Nogaro makes an extremely interesting attempt to explain the protracted stability of the gold-silver ratio, and its ultimate collapse, in terms of the balance of payments between gold-standard, bimetallic, and silver-standard countries (pp. 23–46). This seems to me one of the most valuable parts of his book.

9. Ibid., pp. 86–133.

he finds that bull speculation has held the exchanges above the level to which they would otherwise have fallen. In Germany, the chief stages of the exchange depreciation corresponded to the course of political events, while the more immediate fluctuations corresponded to the flight of capital and the degree of budget disequilibrium. Prices have moved with the exchanges, tho usually not so far; and the quantity of money in circulation has been largely the *result* of the price level. In England, the relation between prices and the exchanges has been uncertain. Deflation and the fall in prices themselves, however, have been the consequence of the discount-rate policy, not of changes in the amount of money in circulation — a conclusion to which Keynes would subscribe. In Czecho-Slovakia and Austria, price stabilization has been the *result* of exchange stabilization; the price stabilization in Austria being effected despite a great increase in the paper circulation.[1] The (informal) Czecho-Slovak exchange stabilization itself was due, he finds, to foreign bull action in the market, and to government intervention.

Finally, Nogaro examines the purchasing-power-parity explanation of the foreign exchange situation. To this explanation he makes a number of objections.[2] First, *any* statement which confines itself to strictly quantitative factors is necessarily incomplete, because it omits the whole range of "psychological" factors: political and monetary speculation, anticipation, and so forth. At times, these factors become of dominant

1. This last result, however, should not be regarded as necessarily paradoxical. A return to stable conditions, after a period of extreme depreciation, usually retards greatly the velocity of circulation of money. This means that a much larger amount of money is needed to support a given price level than before. It may also be remarked that the Austrian price level was apparently stabilized at too low a point, relative to world prices: a rather disturbing rise in prices has recently appeared.

2. Ibid., pp. 206–216.

importance. Second, changes in the volume of internal circulation are usually the *result*, not the cause, of fluctuations in the exchanges.[3] Third, altho price-parities and exchanges usually do in fact tend to move substantially together, and altho their coincidence represents a "normal" development of international trade, it does not follow from this that either factor necessarily dominates and controls the other. The price-parities may often determine the level of the exchanges; but there is equally an abundance of evidence to show that, in particular cases, these parities are altered, without necessary limit, by the fluctuations *of the exchanges themselves*. The recent history of Germany, Czecho-Slovakia, and Russia provides numerous examples. Finally, Nogaro declares that the maintenance of equilibrium in international exchange (where the exchanges are not "controlled") cannot be explained in terms of price and commodity movements alone. Rather, the explanation runs in terms of the international movements of capital and of the use of discount rates — to attract such movements, and to minimize gold flows.[4]

Such is Professor Nogaro's general analytical position, the chief characteristic of which is its stress upon the exchanges, rather than on money and prices, as the original source of disturbance. But its opposition to the purchasing-power-parity position is quite evidently less marked than we might have expected, and certainly less marked than Nogaro would at times lead us to infer. For Nogaro admits — one of Cassel's main theses — that a rapid increase in the quantity of money will force

3. A rapid original increase in money provides the principal exception, as already indicated.

4. A similar view is expressed by Rist. (See below.) Nogaro also uses this doctrine, in connection with trade under *convertible* currencies, to support his attack on the so-called Ricardian price-specie flow analysis. (See pp. 289–299.)

up prices and the exchanges; and both Cassel and Keynes admit, what Nogaro is at great pains to prove, that under certain conditions exchange depreciation may *precede* and cause price increases, and a consequent increase in the quantity of money. Probably both would also grant, in part at least, the validity of Nogaro's other objections to the price-parity theory; while the great present difficulty in that doctrine, the problem of allowing for changes in the equilibrium of international exchange, was first pointed out by Cassel himself, and is not touched by Nogaro at all. As to the relation between money and internal prices, two thirds of Nogaro's present position can be fitted into Keynes's formula, while Nogaro's attribution of a rapid *fall* in prices and the quantity of money to exchange appreciation is, under certain conditions at least, granted by both Keynes and Cassel. It is only in the field of future policies, the restoration of stable conditions, that we shall find a really fundamental difference emerging.

In reaching his conclusions Nogaro, it is true, makes a much wider use of the data in recent monetary history than do either Cassel or Keynes. On closer examination, however, these data reduce to the rather miscellaneous collection of isolated facts, striking but not in themselves very significant. Little or no attempt is made at presenting a continuous statistical picture of the principal elements in any one case of disturbance, and the inferences drawn are correspondingly debatable. The conclusiveness of Nogaro's results, like those of Cassel and Keynes, must therefore be regarded as resting primarily on *a priori* reasoning. But this reasoning itself, in the field of the post-war phenomena at least, is not profound. It fails, I think, to reach to the heart of the matter; and it is marred by numerous ill-directed polemics.

IV

Professor Rist's book on Deflation is, from the analytical side, the most brilliant and most convincing of the group under consideration here. It undertakes a careful and continuous survey of the available data in the countries selected; interprets the resulting facts from a fresh yet closely reasoned point of view; and succeeds in making an important contribution both to the descriptive data of the subject and to its theory. Unlike the writers hitherto examined, Rist makes his statistical evidence bear, if anything, a burden of doctrinal inference which is too light rather than too great. He is almost over-cautious in drawing general conclusions from his facts. But this is one case where apparent vice is real virtue.

Professor Rist's thesis lies somewhere between the two ostensibly opposed positions already examined, the purchasing-power-parity interpretation and the foreign-exchange interpretation. Or rather, to state the matter more accurately, it lies *behind* these other doctrines. Keynes and Cassel start their analysis, in the main, from the extant facts of inflation and increased prices; Nogaro, with exchange depreciation. None of them makes very much attempt, beyond a few general observations, to trace these disturbances themselves to their source; they are primarily interested, rather, in examining the subsequent repercussions. Professor Rist's main concern, on the other hand, is with those more fundamental disturbances, from which the fluctuations of prices and of the foreign exchanges themselves have alike taken their rise. His argument is, that the main explanation of the facts of *inflation* lies in the budget situation; and that the very possibility of *deflation* [5] is

5. A careful and valuable distinction is made between the various types of deflation — monetary, credit, and financial. (See Rist, La Déflation, pp. 1–10.) A "financial" deflation occurs when the gov-

dependent on the establishment of budget equilibrium. Granted such an equilibrium, an improvement in the exchanges will follow of itself, and also a fall in prices. This fall may in some cases be due proximately to the rise in the exchanges, and in others to a deflation of credit; but in either event the ultimate source of the fall is the improvement in the budget situation. During this period of deflation, also, the amount of money in circulation is regarded as being a result of the level of prices. During the period of inflation, on the other hand, an increase in the amount of money and credit in circulation is usually the first step in the collapse, with price and exchange depreciation as common results; tho when the depreciation has become extreme, the sequence may be reversed.

These conclusions Rist derives from a painstaking study of the history of deflation in some four countries, since 1919; a study which deserves especial praise because, alone of the works here examined, it is based almost entirely on continuous time series, erected from the available statistical data. His results are substantially as follows: In England, the application of the Cunliffe Report,[6] after August 1920, led, it is true, to a "monetary" deflation. But this deflation was itself the result of an immediately preceding "credit" deflation, induced by the severe discount policy of the Bank of England and by the consequent economic crisis. No strictly mechanical explanation will suffice to account

ernment pays off some part of the advances, made to it in the form of bank credit (directly or, as by private loans on government securities, indirectly), or of note-circulation. This type of deflation, however, does not necessarily lead to either "credit" or "monetary" deflation, for the re-issue of the credits by the banks may result simply in the substitution of private, commercial, or industrial obligations for the obligation of the government, with a corresponding lack of any reduction in the amount of money in circulation.

6. Rist praises the Cunliffe Report very highly (pp. 14–18). On the other hand, Keynes, as we shall see, condemns it as based on antiquated principles.

for these changes; for, despite the fall in prices, the average decrease in the Bank note circulation, and in the deposits of all banks, was only 7 per cent from 1920 to 1922.[7] With respect to the foreign exchanges, the mechanical explanation is still less adequate, for the exchanges showed no definite relation either to prices, or to the currency circulation. The reason for their improvement, like that in the *internal* value of the currency, lay rather in the gradual recovery of British finance: in the establishment of a budget equilibrium, in the inception of "financial" deflation, and above all in the definite arresting of all further new inflation.[8]

In the United States, financial and credit deflations were accomplished, in essentially similar fashion, through the discount policy of the Federal Reserve Board and the resulting economic crisis. There was no monetary deflation, — a situation which incidentally raises the new problem of deflating a metallic currency. In France, again, an economic crisis led to credit and financial deflations. But the government's inability to balance the budget prevented a permanent monetary deflation, and soon led to a new period of inflation. The budget disequilibrium also explains the failure of the exchanges to recover at that apparently favorable time, for it led to the withdrawal of foreign capital, and even to the expatriation of domestic funds.

Finally, the recent history of Czecho-Slovakia brings out most remarkably the intimate relation between the budget and general stabilization. In 1919, the amount of money in circulation was radically decreased, but the anticipated correction in prices and in the exchanges quite failed to appear; the budget could not be bal-

7. Rist, La Déflation, p. 31.

8. Ibid., pp. 34–39. Rist is less convincing here than in his subsequent analysis of the Czecho-Slovakian case, with respect to the precise manner in which budget improvement operates upon the exchanges.

anced, and the attempt to deflate soon had to be abandoned.[9] In the course of the next two years, however, a budget equilibrium was at last secured. This at once led to steady importations of capital, in such volume that Czecho-Slovakia soon became the effective savings-bank of Central Europe. The balance of payments turned "favorable"; the exchanges rose; internal prices fell, in consequence of the decline in import and export prices;[1] and the amount of money in circulation steadily decreased. An economic crisis necessarily ensued, but was of relatively brief duration. And the favorable balance of payments, together with the probable assistance of a government loan, not only improved the exchanges but enabled their stability to be maintained, in the face of desperate disturbances in all the adjoining countries.[2] These events indicate clearly that a decrease in the amount of money will not, of itself, lead to exchange stabilization or even to a fall in prices; while the mere cessation of further inflation, together with the definite establishment of budget equilibrium, will produce these results almost at once.[3]

9. Ibid., pp. 88–94.

1. Rist makes a great deal of this thesis, which is also characteristic of Nogaro's position: that, in periods of deflation, general internal prices are brought down by the fall in import and export prices, rather than by any direct effect of a decrease in the amount of money in circulation. Yet, as we shall see in a moment, Rist regards this doctrine as being not inconsistent with the quantity theory of money, which he defends.

2. A formal stabilization of the internal and external value of the crown was not effected, Rist tells us, because of the inadequacy of the available stock of specie (pp. 110–112). It is true that the stock was insufficient to permit a return to the simple gold standard, but Rist's figures indicate that it would have been adequate to maintain a gold exchange standard — which was not attempted. As early as December 1922, specie holdings were 8 per cent of the note circulation (and larger than deposits); while specie plus foreign exchange held was nearly 14 per cent of notes plus deposits. In August 1923, the ratios were, respectively, 11.6 per cent and 30.7 per cent. This ought to have been enough, especially in view of the fact that the characteristic movement of capital was towards Czecho-Slovakia rather than away from it.

3. Ibid., p. 87.

From this survey of the recent financial history of the four countries, Rist also draws two minor conclusions worth remarking. First, when inflation is definitely stopped, the resulting stability of prices *resists* any further depreciation of the exchanges, beyond a certain "margin of elasticity," because of the repercussion on the balance of international trade and payments. On the other hand, however, this resistance leads to pressure for an increased supply of money, and to something in the nature of a crisis. If the government's finances are not strong, the consequence may well be the resumption of inflation, and the loss of all the progress that had previously been made. Such catastrophes occurred repeatedly in Germany.[4] Second, it appears that the effect of international capital movements in maintaining the equilibrium of the exchanges, under these conditions, is at least as great as that produced by the transfer of commodities and services, for tho smaller in total amount, they are far more elastic.[5] In this fact lies the supreme importance, so clearly demonstrated in Czecho-Slovakia, of budget equilibrium as the prerequisite to exchange stabilization: while equilibrium attracts such movements, disequilibrium repels them.

We may turn now to Rist's interpretation of the relations between money and prices. From his conclusions on other questions, we should perhaps infer that Rist is an opponent of the orthodox quantity theory, or at least indifferent to it. On the contrary, he is at some pains to establish himself as an ardent defender. He reconciles this position with his earlier analysis of the actual sequence of events by an ingenious, tho perhaps debatable modification of the quantity theory itself. He declares

4. Ibid., pp. 96–101.

5. Ibid., pp. 120, 121. Nogaro, it will be remembered, advances a similar doctrine. The position seems to me to be well taken.

that, whereas the effect of an increase in the amount of money upon prices is rapid, the effect of a decrease is slow. For *inflation* first affects raw materials, wages, and necessities, and from them the initial rise is quickly transmitted to the whole market. *Deflation*, on the other hand, begins, as it were, at the periphery of the price structure, instead of at the center: it first affects articles of luxury, and from them its influence is spread only more slowly.[6] In other words, the extant level of prices offers a positive resistance to any decrease in the quantity of money, as was amply demonstrated in Czecho-Slovakia. The most effective way of inducing a fall in prices is, rather, the improvement of the exchanges, and an increase in production, together with the use of the discount rate in times of crisis.[7] Of these the first is especially important. For rising exchanges produce falling import and export prices, and this, Rist holds, leads to a decline in prices at large — presumably under the argument that most of the "international" articles concerned lie near the center of the price structure, and can hence affect many purely "domestic" prices.

To repeat, Rist regards this doctrine as falling within the legitimate confines of the orthodox quantity theory; which, however, he interprets as applying primarily to the major phases in the history of price changes, rather than in any immediate and short-run sense.[8] Perhaps the best comment that can be made on Rist's view is, that it is not far from the position at which Nogaro arrives, after an ostensibly anti-quantitative departure. The whole issue is of much less importance now than it was made to seem before the war, at least when stated in these terms. Such an approach as that of Hawtrey

6. Ibid., pp. 115–117. See also pp. 96–99.
7. Ibid., pp. 113–117 128–130.
8. Ibid., pp. 96–99.

or of Keynes, with their focussing of attention on the total purchasing power of the country, is more significant.

V

When we turn from the interpretation of the past to the reconstruction of the future, we enter a field in which the idealistic imagination might well be expected to make its influence felt. It would not seem unnatural, therefore, if we were to find the various writers here considered advocating monetary policies in which the skeptic could discover traces of the utopian. But such is not the fact. The methods of approach to the problem of reconstruction, the reforms proposed, are in each case derived directly from the antecedent analyses of recent experience, and do not transgress the bounds there indicated. Granted the validity of these analyses, the claims of the corresponding constructive proposals are in the main not assailable.

Professor Cassel, consistently with his general stress on internal purchasing powers, had regarded the essential first step in monetary reconstruction as being the stabilization of the *domestic* price level, a result to be secured by using the discount rate to counteract the threat of material changes in prices.[9] Keynes takes an essentially similar general position, but with certain important modifications. He admits that a beginning may be made either with the stabilization of prices or with the stabilization of the exchanges, but insists that if one of the two is stabilized, then the other will tend to move with all the fluctuations in the world current. A choice must be made, and he therefore selects stability of

9. Cassel, Money and Foreign Exchange after 1914, pp. 273–275. The extent to which the discount-rate is effective under present inconvertible conditions is discussed below.

prices, as being far more important to the country's welfare.[1] This stability, as in Cassel, is to be secured by a deliberate control of the volume of currency and credit, designed to offset potential price changes, and guided by index numbers or other workable criteria.[2] But the exchanges are not to be left to their own devices. The development of a forward exchange market by the central banks is urged, and the establishment of a gold exchange standard is suggested. Finally, in all countries where the current depreciation exceeds five or ten per cent, devaluation at present rates is regarded as the only reasonable policy. Deflation, under these circumstances, is not only unjust but futile; with all the enormous disturbance and suffering involved, no other result ensues than a change in the size of the unit of account.

These, however, are observations addressed to the problem of reconstruction at large. Keynes is much more specific on the question in which he is primarily interested: the monetary restoration of England. It is perhaps no more than fair to point out that, since Keynes wrote, the whole English situation has distinctly altered for the better. Nevertheless his suggestions have a wider interest than that of the immediate present and raise questions of permanent importance. He finds that the level of internal prices in England can be deliberately controlled through the coöperation of the Treasury, the Bank of England, and the five big joint-stock

1. Keynes, Monetary Reform, pp. 167, 168. Keynes points out that the pre-war gold standard involved the selection of price stability rather than exchange stability. The entire first chapter of his book is devoted to a demonstration of the disastrous consequences, to economic progress and to economic justice, of changes in the value of the monetary unit. On the futility of radical deflation, see pp. 154–167.

2. See for example, pp. 202, 203. The omniscience required to manage such a system at all accurately seems to be presupposed without hesitation.

banks; the control being so exercised as to offset the *future* change in prices.[3] The rôle of the banks will be to vary the current volume of credit, with the explicit purpose of securing price stability. (They now play this rôle only half consciously, and therefore ineffectively.) As to the agency by which the control is to be realized, the Bank of England is of course at the center of the credit situation. It is ordinarily supposed that the mere variation of its discount rate provides a sufficient instrument. Keynes, however, finds that since the war the Bank's purchase and sale of securities has become at least as effective an agent as the discount rate for controlling the market; and the two methods should therefore be used concurrently.[4] Granted this control of credit, the amount of money in circulation may then be left to follow as a mere resultant, provided only that the Treasury will refrain from further inflationary issues. Stability of the foreign exchanges also can be secured by deliberate action. For if the Bank of England fixes the buying and selling prices of gold periodically, say once a week, then the sterling-dollar exchange will at once be automatically stabilized within the corresponding limits.[5] Adjustment should be made from time to time, to prevent the exchanges from upsetting the stability of English prices; while a gradually increasing coöperation between the Bank and the Federal Reserve Board will bring dollar and sterling prices themselves into sub-

3. Pp. 204–213. Keynes berates the Cunliffe Reports of 1918–19 (unlike Rist, who praises them), because they completely ignore this problem of the stability of the *internal* price level. He describes the Reports as belonging to "an extinct and an almost forgotten order of ideas" (p. 211). The Cunliffe Committee set up a worth-while national ideal, but it is equally true that they quite left out of account many vital intermediary questions.

4. Pp. 92, 93. Keynes criticizes Cassel for his too exclusive reliance upon the discount rate as an agent of control, under post-war conditions.

5. Pp. 205–209.

stantial harmony and stability.[6] The Bank's control, also, would be materially strengthened by its quotation of a three-months forward exchange rate, and by a distribution of Treasury remittances on the American debt account in such way as to offset the seasonal pressure of ordinary trade payments. Finally, the rôle of gold in this system is confined to the provision of a store of value, and — as in Cassel — of a reserve for the balance of payments. The heart of Keynes's proposals for English reconstruction lies in the use of the deliberately stabilizing action of the central banking system. To the possibilities of such action, we shall return presently.

But Keynes's most striking observations are not made in connection with the problems of any particular country, or in connection with any particular device for reform. They are made on the question, so violently agitated since the war, of the general restoration of the old gold standard. Keynes's position, despite the theatrical phraseology in which it is sometimes expressed, is far from unsound.[7] He points out, first, that the maintenance of the pre-war gold standard involved an unconscious selection of exchange stability, rather than price stability. Such a selection Keynes condemns, on grounds that we have already examined: of the two, price stability is far more important to the country's welfare. Second, he observes that, under present conditions, the simple gold standard can ensure exchange stability only if all countries adopt it; and, in and of itself, under no conditions whatsoever can it ensure price stability.

6. Pp. 220, 221. He condemns (pp. 189 and 220) the suggestion, of Hawtrey and others, that the Bank and the Federal Reserve Board make some sort of formal agreement for this purpose; on the ground that this would make the English price level and credit cycle too dependent on the Board's whims, since the Board would have the balance of power. Cf. R. G. Hawtrey, Monetary Reconstruction (1923), pp. 63, 64.

7. In general, see pp. 177–191.

These considerations lead him to further diatribes against the gold standard, which he describes as a "barbarous relic." Even under pre-war conditions the maintenance of the gold standard depended on the firm maintenance, by the various central banks, of a certain gold-reserve ratio. Since every tide in international trade was able to alter the absolute size of these reserves, it changed also the volume of domestic credit and the level of internal prices. Intelligent control, in the interests of business stability and the steadiness of prices, was largely lacking. Since the war, on the other hand, gold has become a "managed" currency, the value of which is now almost wholly dependent on the policy of the Federal Reserve Board.[8] But the Federal Reserve Board, since 1921, has been very careful to control this value in such fashion as to produce substantial internal price stability. The American standard is really no longer gold, but the dollar: it is a regulated standard, virtually non-metallic; based on stability not in terms of gold but in terms of goods and services.[9]

Keynes's plea is simply that this new state of affairs be consciously recognized.[1] The attempt to return to the simple (unregulated) gold standard should be abandoned. It is stupid, and will not attain the desired end. Instead, each country should concentrate its efforts on

8. See also the cogent analysis in Hawtrey's Monetary Reconstruction, pp. 123, 124, and elsewhere.

9. Keynes comments with asperity on the fact — not quite so true now as when he was writing, over a year ago — that the stability of the value of gold in the future depends almost entirely "on the United States being foolish enough to go on accepting gold which it does not want, and wise enough, having accepted it, to maintain it at a fixed value" — that is, by burying it.

1. "Convertibility into gold will not alter the fact that the value of gold itself depends on the policy of the Central Banks. . . . The bank rate is now employed, however incompletely and experimentally, to regulate the expansion and deflation of credit in the interests of business stability and the steadiness of prices. . . . A regulated non-metallic standard has slipped in unnoticed. *It exists.*" (Pp. 184, 186, 187.)

the maintenance of internal stability, in prices and in business, by the methods outlined above. The monetary unit should be divorced from any permanent connection with gold at a fixed rate, a stable goods-and-services standard being substituted for the pre-war (unstable) gold standard; and occasional variations in the price of gold (together with other devices) will ensure stability of the exchanges, relative to the given price levels. Even where the present depreciation is slight, as in England, a return to the former exchange parity should not be accompanied by a return to the former system of laissez faire with respect to prices and the value of money. Where the present depreciation is great, devaluation and the institution of a "managed" currency are the only sane solutions.

The reconstruction proposals of Nogaro and Rist are much less sweeping than those of Keynes. Nogaro, rejecting the whole purchasing-power-parity approach, places his faith in the establishment of a gold exchange standard, as the first step, with the stabilization of internal prices presumably left to take care of itself. Such a recommendation follows naturally from his general emphasis on the exchanges as the original source of disturbance. He urges as a further advantage the fact that, under this plan, it will be possible to raise the rates of exchange from time to time, and thus induce, if it is desired, a progressive appreciation in the value of the internal currencies.[2] To facilitate the operation of the system, he revives the idea of creating an International Credit Institute. It is not clear, however, that this Institute will add anything except red tape to the advantages already secured by the gold exchange stand-

2. Nogaro, La Monnaie, pp. 223–225, 276–279. There seems to be no defense for the proposal for a progressive raising of the rates, except as a political sop to national pride. Its feasibility will depend on the internal budget situation.

ard itself. On the other hand, Nogaro quite fails to make any constructive suggestions with respect to the second half of the problem — the internal price, money, and credit situation. In view of the present financial condition of France, this reticence is perhaps not unjustified, but it imparts a rather perfunctory and mechanical complexion to his proposals.

Professor Rist does not deal explicitly with the general problem of monetary *restoration* at all.[3] It is a reasonable inference from his analysis, however, that he would regard the restoration of budget equilibrium, and the cessation of further inflation, as leading automatically to a loose stability in prices and the exchanges (exchange stabilization being the source of price stability, rather than vice versa). At one point, indeed, he suggests that a limit to the improvement of the internal and external value of money should be set "when specie payments can be resumed." This does not give us any very definite determination, but Rist recognizes that an irreducible "residuum" of inflation will inevitably be left in all countries, and that deflation beyond this level is pointless. Presumably he would recommend devaluation when the minimum is reached.

VI

Both in the field of analysis and in the field of policy, the books here examined start from quite different points of view and are often concerned with quite different problems. Yet on some of the most critical questions the doctrines that they advance are surprisingly similar. It will be useful to recapitulate the principal

3. See however his suggestion (La Déflation, p. 59, n. 1), taken over from an earlier proposal of Keynes, that the excess American gold be used for making loans to countries that desire to stabilize. And elsewhere (pp. 82–86) he makes specific recommendations with respect to France: budget equilibrium, limitation on note issue, and the provision of a "margin of elasticity" in this issue.

positions developed, and to indicate the conclusions which the burden of the evidence seems to warrant.

First, the problem of the relation between money and prices. Here the essential differences in statement are due more to differences in the conception of the problem itself than to differences on a given common issue. All of the writers admit that rapid increases in the quantity of money in circulation provoke a rise in prices; all admit that in a period of deflation the decrease in the amount of money is the result, rather than the cause, of the price decline; and they would probably all agree with Nogaro's thesis, that small and slow variations in money are absorbed by changes in the volume of production, or in other ways. But whereas Nogaro (and to some extent Rist) is content to stop his analysis here, Cassel and Keynes push the matter much further, and arrive at a formulation which runs in terms of the variation in the country's total purchasing power. To this point of view, which was so forcefully developed in Hawtrey's Currency and Credit a few years ago, I cannot but subscribe. Under modern conditions, in which bank credit plays so important a part, the older statement of the problem, primarily in terms of media of exchange in circulation alone, is evidently inadequate.

Second, the relation between prices and the foreign exchanges. Here too there is substantial agreement on the major facts. In a general way, the fluctuations of prices and the exchanges coincide fairly closely; and either, according to conditions, may precede the other both in point of time and in magnitude. Differences arise, rather, on the interpretation to be placed on this relationship — on the causal sequence to be imputed. Rist and Nogaro find the relation to be one of interdependence, on the whole. They place the principal stress, however, either on the exchanges, or on the factors that

operate directly upon them: the balance of payments, speculation, anticipation; international capital movements; and the situation of the budget. For exchange stability leads to price stability, but the converse is *not* necessarily true. And while the stability of prices, in the absence of further inflation, undoubtedly offers a certain resistance to a fresh depreciation of the exchanges, nevertheless the exchange depreciation tends to alter the previous price-parities themselves. Keynes and Cassel, on the other hand, are much less explicit. They rather avoid the postulating of any specific mechanism, and regard the purchasing-power-parity as providing simply a loose norm, or equilibrium-point, for the "short time" fluctuations of the exchanges. But the elaborate qualifications that are now made with respect to the "equation of exchange" in international trade, before these parities can be applied to contemporary conditions, greatly weaken the immediate significance of the theory: the earlier and simpler formulation was better.

From these doctrines and data a tentative general conclusion can be drawn, somewhat as follows: First, if a definite stop has been placed to further inflation, by the government and by the banks, then a loose stability of both prices and the exchanges will ensue. Neither that of prices nor that of the exchanges will in all cases be a cause, nor in all cases a result, of the other's correction. Rather, both are common products of the dominant element in the situation, the equilibrium of the budget.[4] Under these conditions, the relation be-

4. It is, however, true that if a rise in the exchanges ensues first, from an improvement in the budget situation, prices are apt to fall as a direct consequence. This is one of Professor Rist's theses.

Rist has also suggested, and I think correctly,—as has Nogaro,—that when the budget has been balanced the "equilibrium" of the exchanges, at given price levels, is maintained quite as much by international capital movements, as by the fluctuations in commodity trade and prices.

tween prices and the exchanges is not necessarily determinate. The long-time validity of the purchasing-power-parity doctrine (that is, with respect to periods of at least a year, and possibly longer) does not seem to me open to question, *provided* the budget is balanced and any other substantial inflation stopped. But in the short-run period, prices and the exchanges are so interdependent as to make any attempt at a really generalized statement futile. In their explanations of the phenomena of this period, Nogaro is as correct as Rist, and each as correct as Keynes or Cassel. Their differences are largely due to differences in the particular case or the particular phase selected for examination.[5]

Second, if inflation has on the other hand not been stopped, then the exchange depreciation is usually the immediate cause of fluctuations in prices. The price-parities, except at the beginning of the process, and except in the most extreme cases of depreciation, are usually outstripped by the exchanges. They are also themselves being constantly altered by the exchange fluctuations, rather than directly by changes in the circulation; and thus, on both counts, become useless as an index or norm of the exchanges. The price-parities can perhaps be regarded as providing a norm for exchange fluctuations; but the evidence thus far accumulated equally well supports the view that — as is true even with balanced budgets, in the short-run period — the exchanges here provide a norm for prices. This condition usually persists as long as any domestic con-

5. In the immediate day-to-day sense, the exchange rates are determined by one condition alone: the state of the balance of international payments. (See an article by the present writer in the issue of this Journal for May 1922.) Neglect of this simple fact frequently leads to confusion. The real issue in the present controversy, if such it can be called, is over the secondary question: what are the conditions that themselves determine the absolute and relative sizes of the various demands that enter the exchange market?

fidence in the national currency survives. A large increase in the amount of money in circulation, finally, may be the original cause of the general depreciation; but once this depreciation has got well under way, the volume of the circulation becomes, rather, the result of the price level, and hence of the exchanges.

Third, there is the dominant problem of monetary reconstruction. Cassel and Keynes begin with the stabilization of internal prices, by deliberate manipulation of the volume of money and credit. Exchange stabilization is treated as a secondary problem, to be solved by the action of the central banks, and by a certain measure of international coöperation among such banks.[6] Nogaro, on the other hand, begins with the stabilization of the exchanges, by means of the gold exchange standard; and leaves the value of money to follow, as best it may, the path indicated by the selected exchange rate. Rist stops short with the restoration of budget equilibrium, and with the establishment of an elastic but definitely limited currency (unless we also add his passing suggestion concerning the American gold loan).

What conclusions shall we then draw? In the first place, it is generally agreed that, except in the case of England, deflation at the present time would impose a hopelessly heavy burden on the taxpayer. In the second place, it is generally agreed that the cessation of further inflation, either by governments or by banks, is the essential prerequisite to any plan for reconstruction and stabilization. Granted this condition, it does not seem to make much difference as to the precise point at which

6. This last was one of the leading features of the Genoa resolutions of 1922, and has since been advanced still more explicitly by Hawtrey. See the last essay in Hawtrey's Monetary Reconstruction, and also pp. 60–65 of that volume. Hawtrey places much more stress than Keynes on the gold exchange standard, thus coming closer, here, to Nogaro's doctrine.

the reform begins.[7] Any further permanent rise in prices is prevented, and any further permanent depreciation of the exchanges; all tendency to an exchange depreciation in excess of a certain margin of elasticity being corrected, in the absence of new inflation, by the reaction of the extant price level on the balance of trade and payments. After the initial backlash of too great improvement, and of the resulting economic crisis, is safely passed, the long-time level of prices and the exchanges will remain stable automatically, within reasonable limits. The precise level at which the stabilization is effected, formally or informally, will be altogether a function of the tax-paying capacity and willingness of the citizens of each country.

But the prevention of disastrous short-time and temporary fluctuations is also highly desirable: such fluctuations as arise from the seasonal and cyclical variations of trade and credit. For this purpose, the several supposedly alternative devices already examined may well be used concurrently. Control of prices can be secured in considerable degree by deliberate manipulation of the amount of money and bank credit in circulation, along the lines suggested by Cassel and Keynes; altho the extent to which deliberate control can be made effective is more limited than they would imply.[8] Con-

7. Professor Flux, in a recent volume, also makes budget equilibrium the starting point. He finds that this will lead to price stabilization, and this to exchange stabilization, but suggests the adoption of the gold exchange standard as a temporary solution — thus corroborating the view that it makes little real difference as to just where the process starts. (A. W. Flux, The Foreign Exchanges (1924), pp. 175–179.)

8. The general proposition implicit in Keynes's and Cassel's reasoning, that the value of the monetary unit is primarily determined by the volume of bank credit, under given general economic conditions, is fundamentally correct. But the further assertion, that the volume of this credit can be deliberately controlled in the interests of price stability, is quite another matter. Where a genuinely centralized banking system exists, — as in England or France or the United States, — and where this system controls a strategic part of the country's total bank

trol of the exchanges will result from the use of the gold exchange standard; or, if funds for this are lacking, an effective measure of regulation can be exerted through the central banks. Finally, the whole process of European reconstruction and restoration will undoubtedly be greatly facilitated if an acceptable way can be found for utilizing the excess of American gold. One such way has been suggested by Professor Rist, the granting of gold loans by the American banks to those countries whose budget and banking situations provide reasonable guarantees of the capacity and desire to maintain stability. The gold would not be used for internal circulation, but would constitute a reserve to support the balance of payments and the exchanges in times of stress. The recent inception of a drain of gold from the United States, however, may indicate that no formal measure of this sort will be necessary.

One further suggestion may be made. It is now generally recognized that the essential characteristic of a metallic standard is simply the fixing of the price of one (or two) commodities by the government, in terms of the national currency unit. It is also recognized that the stabilization of the value of this unit in terms of goods and services at large is far more important than its stabilization in terms of any one article, such as gold. A fixed price of gold is important only with respect to

credit, then any rise in prices can undoubtedly be prevented from exceeding certain limits. And once the general strain on private credit gives the central system a dominant position, the process of contraction can be forced to an indefinite extent. But the central system has little influence in provoking a recovery after depression: other factors are dominant here. Nor does the central system seem able to offset a rise in prices in advance of its actual appearance: aside from the omniscience required to determine when the critical point is approaching, it is not until after a substantial rise in prices has developed that the private money market is subjected to that shortage of credit, which compels it to turn to the central system for essential assistance, thus placing the central system in a position of control.

international transactions, to provide a common measure. It would therefore seem reasonable to confine the use of the world's gold to the settlement of the world's international payment balances, and to the establishment of reserves against the adverse balances of the future. The internal value of the monetary unit can then be left to the stabilizing control of the central banks and Treasuries. Certainly such control, however imperfect it may be, is better than the total lack of internal price regulation implicit in the maintenance of the pre-war gold standard. The recent monetary and financial history of the United States provides a sufficient proof.

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REVIEWS

COMMONS'S LEGAL FOUNDATIONS OF CAPITALISM [1]

AMONG the most frequent strictures that have been brought against the prevailing doctrines of economic theory is the charge that they are lacking in realism. The so-called principles of economics, it is often asserted, lack both the inductive basis and the mathematical precision of scientific inquiry; and even in the sweeping terms in which they are generally formulated, they are but a restatement, for the most part, of the observations and deductions of the pioneer economists of another age, reflecting an industrial order and social relationships quite distinct, in many of their essential aspects, from the current environment of economic activity. On one side, this criticism has led to a greater emphasis upon statistical analysis and quantitative measurement of the forces and tendencies which are traditionally referred to as economic laws. This development has recently found its most intensive expression in the study of cyclical fluctuations in trade and industry, with its indices of wages, living costs, production and prices, and its correlations, lags, and forecasts. On the other side, this criticism has directed attention to the importance for economic science of progressive changes in business organization and industrial technique, and particularly to the significance of social behavior in institutionalizing the valuation process. The simplified assumptions of the classical economists have been supplemented, if not displaced, by what have been deemed to be the "realities" of the world in which we live, buttressed by the findings of psychological in-

1. John R. Commons, Legal Foundations of Capitalism. The Macmillan Company, New York, 1924. Pp. x, 394.

quiry and interpreted in terms of the organic character of society. In his *Legal Foundations of Capitalism*, Professor Commons aims to bring a greater measure of realism to economic theorizing by encompassing within its basic materials the customs and habits of social life as authoritatively recognized in the decisions of the courts. His purpose is "to work out an evolutionary and behavioristic, or rather volitional, theory of value."

This study is the result of a long and varied experience. Professor Commons's own explanation of its origin and development throws the clearest light upon the nature of its primary purpose, and will facilitate our subsequent appraisal of the success with which this purpose has been achieved. "It was commenced," he writes, "thirty-five years ago at Johns Hopkins University under my stimulating teacher Richard T. Ely." Since that time he has attempted, as a professional economist, to expound the principles of the science, and he has had numerous opportunities to investigate many of the practical issues involved in the so-called labor problem and in the valuation and regulation of public utilities. Moreover, as an economic adviser, he has been called upon, from time to time, to assist legislative committees, particularly in his own state of Wisconsin, in drafting bills touching upon these and allied fields. In his *Distribution of Wealth*, published thirty years ago, Professor Commons finds that he "tried to mix things that will not mix — the hedonic psychology of Böhm-Bawerk, and the legal rights and social relations which he had himself analyzed, and then excluded from his great work on the psychological theory of value." This conclusion was largely the result of Professor Commons's experience in testing legal and economic theories in his rôle as legislative assistant. He and his students, he declares, "had to study the decisions of the courts, if the new laws were to be made constitutional, and that study ran into the central question, What do the courts mean by reasonable value? Somehow the answer was tied up with reasonable conduct. None of us could find much in the writings of economists except those of Professor Ely that threw light on the subject. From the

court decisions it seemed that anything 'reasonable' would be sustained, and so we had to use the words reasonable value, reasonable safety, reasonable wage, and fix up reasonable conduct for public officials and private citizens, whether we knew what it meant or not."

He found a starting-point for the solution of these perplexing difficulties in the suggestion offered in the critical writings of Professor Veblen, that "an evolutionary theory of value must be constructed out of the habits and customs of social life." Since these customs find their most authoritative expression in the adjudication of controversies by the courts, and since the character and direction of business practice is largely moulded by the legal principles enunciated therein for the guidance of future conduct, he "went to work with his students," he writes, "digging directly out of the court decisions stretching over several hundred years the behavioristic theory of value on which they were working." In the course of this process they discovered that they were engaged not merely upon the formulation of a theory of reasonable value, but upon an analysis of the "legal foundations of capitalism."

It should be noted, at the outset, that the difficulties of the book for the reader, whether he be economist or lawyer or historian, are so great as almost to baffle complete understanding. The impressiveness of its subject-matter and of the erudition and analytical power frequently displayed is largely negatived by a confusing complexity of thought, structure, and expression. Nor are these difficulties to be traced entirely to the striking originality of the material and ideas sought to be expounded. The style and technique are so abounding in metaphysical abstractions and tenuous refinements that frequently even the most familiar notions are clothed in such forbidding garb as to obscure their effective significance. While the study, as we have seen, is realistic both in aim and in origin, its method of execution is markedly unreal. Much of the material is mystifying rather than enlightening. The author presents a bewildering admixture of jurisprudence, economics, legal and economic history, psychology, ethics,

and politics. The main threads of his inquiry are so repeatedly overlaid with insignificant, if not entirely adventitious, metaphysical dialectic that it is almost impossible to secure a unified conception of his course of reasoning. While he purports to work out a volitional theory of value on the basis of social custom as reflected in the decisions of the courts, most of his analytical material deals with jurisprudential "concepts," garnered from the philosophizings of the courts or from the classifications of legal students, rather than with the actual "working rules" which are deemed so indispensable to an adequate understanding of economic conduct. Accordingly, subtle distinctions, critical and constructive, crowd upon each other in bewildering succession. Their relationship to the theory of reasonable value which he seeks to formulate is frequently no less obscure than irrelevant.

In the extended discussion of "transactions," which Professor Commons deems to constitute "the ultimate unit of economics, ethics and law," there is an elaborate analysis of fundamental legal concepts, based upon the scholarly contributions of Austin, Salmond, Hohfeld, Kockureck, and other students of the science of law. Defining the will as "*will-in-action*, overcoming resistance and choosing between different degrees of resistance" (p. 69), rather than as mere potency, *will-in-vacuo*, as developed under the influence of John Locke, he substitutes for the lawyers' distinction between "acts" and "omissions," the concepts of "performance," "avoidance," and "forbearance"; and he adopts the term "faculties" for "powers." He distinguishes between "absolute rights and duties," which he deems to be applicable only to the physical world, the uncorrelated "rights" and "duties" of "unauthorized" ethical transactions, and the correlative "rights" and "duties" of "authorized" legal transactions, whose limits he defines in terms of "liberties" and "exposures." Similarly, he distinguishes, under conditions of absolutism, in ethical transactions and under constitutional government, the relationship between the "powers" and "liabilities" of public officials, notes their limits in terms of "disabilities" and "immunities," and further analyzes this

collective authority of officials into "remedial powers," which are employed "on occasion of *wrongful* acts of other persons," and "substantive powers," which are employed "on occasion of *rightful* acts of self." On the basis of these and numerous other distinctions and definitions, he builds up a "complete scheme of legal correlatives, equivalents, limits, and reciprocals accompanying every transaction" (p. 124).

In many of these instances Professor Commons takes issue, in matters of analysis as well as in terminology, with acknowledged authorities in the field of jurisprudence. But the shortcomings of this approach (and this is the most striking rather than the sole illustration of his methodology) consist not so much in its faultiness as jurisprudence, as in its futility in illuminating the practical problem which he has set himself of determining what the courts mean by reasonable value. The concepts that he uses are but the tools of the scholar. They are applicable to all human relationships, as regulated by law, and not merely to the problem of value or to the foundations of capitalism. While they are exceedingly useful in rationalizing the heterogeneous connotations of legal rules, they issue from the decisions of the courts rather than condition them. They possess little practical significance for the day-to-day decision of actual controversies; their bearing upon the customs and practices of economic life is even more remote. Essentially they are but logical categories. In the words of Professor Commons himself: "These rational relations are simply abstract concepts emptied of all content and then correlated mathematically in such a way as to be true no matter what happens" (p. 121). But the defect of this method does not consist merely in the fact that this rationalizing "would be equally correct whether applied to a band of savages, a soviet, England, Germany, or the United States"; nor does the solution lie in pointing out that "it is the officials-in-action who constitute the state-in-action, and the legal relations which we have discussed are formal statements of ideals, wishes and hopes which may or may not be realized when the officials come to act" (p. 123). In either case these legal concepts are devoid of content. If the social customs

which mould economic conduct are to be drawn from the law, they must be found in the concrete rules emerging from the adjudication of actual controversies, rather than in the abstract classification of legal relationships, in the definition of fundamental concepts, or in the mere dicta of courts of last resort. Rules of law, as applied by the courts, possess neither the unity nor the self-consistency to be derived automatically from even such relevant concepts as "property," "liberty," and "value."

The analytical portion of this work, while broadly suggestive, does not appear to marshal the essential materials for the volitional theory of value which it seeks to formulate. It but directs attention to the basic elements of such a theory. Traditional economic theory, Professor Commons contends, "began with a Commodity as its ultimate scientific unit, then shifted to a Feeling, in order to explain a Transaction which is its practical problem" (p. 5). With a commodity as a starting-point, the early economists, including Smith and Ricardo, are said to have relied upon Newton's principle of mechanism, borrowed from the physical sciences, for their explanation of economic phenomena. From the standpoint of these economists, value was an income of commodities and cost an outgo of commodities. Then, under the influence of such men as Bentham, Jevons, and Böhm-Bawerk, the emphasis was shifted from commodities to feelings, — sacrifices and satisfactions being accepted as the dominant motives for economic conduct, — and Malthus's principle of scarcity came to supplement the principle of mechanism. From the standpoint of the hedonic economists, value was conceived in terms of pleasure and cost in terms of pain.

Both sets of theories, it is argued, were chiefly concerned with the relations of man to nature. Since the human will was traditionally regarded as arbitrary and capricious, the relations of man to man were neglected. "Economic theory, from the time of the Physiocrats, has endeavored to get rid of the human will and to explain economic phenomena in terms of physical and hedonic forces" (p. 376). But a volitional theory of value, while it excludes neither commodities nor feelings

nor their respective principles of explanation, finds its very essence in the relationships between man and man as they emerge from the will-in-action. The human will operates through transactions. The transaction becomes the ultimate unit of economic science. It is "two or more wills giving, taking, persuading, coercing, defrauding, commanding, obeying, competing, governing, in a world of scarcity, mechanism and rules of conduct" (p. 7). We no longer look to the isolated individual for the explanation of economic phenomena, nor even solely to the two individuals directly concerned in consummating an exchange of commodities or services. The exercise of power or the choice of opportunities for each of the parties immediately involved is also dependent upon the next best alternatives available to them, as well as upon the person clothed with the judicial function of determining the rules applicable to the given transaction. The transaction, then, involves "five individuals doing something to each other within the limits of working rules laid down by those who determine how disputes shall be decided" (p. 69). The essential character of these transactions is moulded by the working rules that govern them. It is these working rules that constitute the sources of the individual's rights, duties, liberties, and exposures. They determine what he can do, what he must do, what he may do, and what he cannot do. But each transaction is not an isolated phenomenon. It is part of a continuing process. Similarly, each individual is not an isolated person. He is part of a "going concern." Economic relationships, therefore, are largely moulded by the working rules of going concerns. These going concerns are political, industrial, and cultural. They exercise, respectively, physical power, economic power, and moral power. The sanctions of their working rules are to be found in fear of violence, fear of poverty, and fear of mere opinion.

On the basis of these working rules, operating in a world of scarcity and mechanical forces, the essential elements of a volitional theory of value may be developed. Value and cost must be fashioned in terms of "persuasion, coercion, command and obedience," which are "the psychological equiva-

lent, not of commodities, but of habits and customs operating within their legal limits of rights, duties, liberties and exposures" (p. 379). Primarily, both value and cost look to the future. Their earmarks are anticipation or inducement, and caution or resistance to inducement. They are *psychological value* and *psychological cost*. Secondly, value and cost have the objective meaning of the income and outgo of commodities. This is *real value* and *real cost*. Finally, value and cost have the behavioristic meaning of prices received and paid in the exchange of commodities or services in actual transactions. This is *nominal value* and *nominal cost*. The union of these three meanings is deemed indispensable to an adequate theory of reasonable value. "A reasonable system of prices can be judged such only as it conforms in some way to the psychological or ultimate goal of welfare and the physical or intermediate goal of production of wealth" (pp. 381, 382). But the dominant element is to be found in the strivings of individuals to exercise power and to choose opportunities on the basis of the customs and habits reflected in the working rules of going concerns. "The immediate instrument of inducement is the price-system, the intermediate instrument is the commodity-system, but these are effective only as they influence or are influenced by the unseen psychological system of purposes" (p. 382).

How far can such a theory of value be constructed from the decisions of the courts? Professor Commons approaches the task with confidence. The Supreme Court of the United States, he avers, "occupies the unique position of the first authoritative faculty of political economy in the world's history" (p. 7); and he lays down the sweeping proposition that "the courts, in their decisions, endeavor, by means of common rules, to make the nominal value, or prices, represent, as nearly as practicable, the psychological value, or anticipation, and the real value, or quantity, of commodities and services. Their goal is a scheme of 'reasonable value'" (p. 9). It is doubtful whether the Supreme Court, despite the tremendous powers and pervasive influence of that august tribunal in matters of economic policy, either looks upon it-

self as an "authoritative faculty of political economy," or would welcome the designation, and there certainly appears to be no basis for the assumption that it in fact occupies such a position. Neither economists, nor the science which they cultivate, can thus readily be made to abdicate independent search for truth. Both economic activity and the rationalizing process which economic science brings to bear upon it precede rather than follow the settlement of disputes through resort to the courts.

Economic facts and their economic interpretation constitute the most pertinent material for the adjustment of legal rules to the changing conditions of life. Even the explicit judicial condemnation of particular findings of economic analysis does not destroy their validity. The courts do, in fact, start with the transaction as their ultimate unit of investigation — it is of the very essence of the judicial process to adjudicate concrete controversies between plaintiffs and defendants; but the influence of their decisions upon the endless flow of values which emerge in the practical world is merely to establish, from time to time, broad limits within which the anticipations of individuals may work themselves out. These broad limits are included among the basic assumptions of prevailing economic theory. They involve such conceptions as private property, freedom of contract, individual initiative, the maintenance of competitive conditions. But the actual anticipations of individuals are more largely influenced by the constantly changing facts of economic life than by the legal environment which may constitute a remote conditioning factor. The mass of values which emerge in the form of prices are in no sense authoritative. They spring from the free play of economic forces. Only within the field of so-called public policy — where monopoly is deemed to be "natural," where the operation of the competitive principle is believed to be artificially obstructed, where the results of free enterprise are conceived to be inimical to the general welfare, or where similar influences are operative — are the courts called upon to evolve a scheme of "reasonable value."

The material adduced by Professor Commons having a

direct bearing upon value is almost exclusively of this character. It is taken from the broad field of public regulation of industry. For example, on the basis of an analysis and discussion of the Slaughter House Cases, the Munn Case, the first Minnesota Rate Case, and the Allgeyer Case, Professor Commons asserts that the change of the concept of property "from a principle of exclusive holding of physical objects for the owner's private use, into a principle of control of limited resources needed by others for their use and thus into a concept of intangible and incorporeal property . . . was gradually accomplished in American jurisprudence between the years 1872 and 1897, and consisted in changing the definitions, by the Supreme Court, of the terms 'property,' 'liberty,' and 'due process of law,' as found in the Fourteenth Amendment to the Constitution" (pp. 6, 7). He fails to appreciate, apparently, that the changes in these concepts thus evolved were but incidental to the adjustment of "public policies" to the limitations of a written constitution. The recognition of exchange-value as property, and the corresponding expansion of liberty, had been accomplished in England more than a century earlier; and in private transactions the acceptance of the notions of incorporeal and intangible property, of "encumbrances" and "opportunities," both in business practice and in economic theorizing, did not await these decisions of the Supreme Court. Only within their proper sphere, which chiefly involves the testing of the validity of legislative enactments and administrative orders by reference to constitutional guarantees, do the courts attempt to define "reasonable value." Hence we find that Professor Commons, in his actual analysis of decisions bearing upon "valuation," "apportionment," and "imputation," deals almost entirely with cases involving taxation, condemnation proceedings, and the regulation of public utility charges. The standards of valuation in these cases, applicable not to ordinary commodities or services but to industrial plants and business concerns or their constituent properties, are largely "purposive"; but even in these standards the courts lean heavily, if not always soundly, upon the theories of economists. These fields doubt-

less afford a fruitful channel for "an extension of value theory." There is urgent need for clarification of the reasoning and unification of the decisions in valuation cases. Toward this end economists may legitimately be looked to for solid contributions. But as at present formulated, the opinions of the learned justices on the problem of valuation (with notable exceptions which are usually minority utterances) can hardly be accepted as models of sound and realistic theorizing to be emulated by economists. Moreover, as has already been indicated, the decisions on "reasonable value" are largely confined to problems of public control. In the general field of price determination, the facts of economic activity, — business organization and industrial technique, production and markets, supply and demand, commercial practice and consuming habits, — rather than courts, judges, and laws, afford the most promising materials for the fashioning of realistic theories of value. The working rules of the courts are generally but a tardy recognition of the anticipations of individuals as they manifest themselves in the development of actual practice.

Perhaps the most enlightening part of the volume is to be found in three historical chapters covering approximately one hundred pages. Here Professor Commons deals respectively with "the rent bargain," "the price bargain," and "the wage bargain." This material, more than any other portion of the book, may be said to present the "legal foundations of capitalism." It seeks to trace the evolution of the various institutions and instruments essential to capitalism, which is deemed, in substance, to be a system of "production for the use of others and acquisition for the use of self" (p. 21). Accordingly, starting with the royal prerogative and the common law as the primary sources of the modern notions of property, liberty, and contract, which are part and parcel of an exchange economy, Professor Commons describes the emergence of private property in land through the commutation of governmental rent into money payments, and of the liberty of the subject through the protection of the common law courts, the abatement of the special privileges of the

gilds and the condemnation of crown monopolies, "the subjection of officials as well as citizens to the jurisdiction of the ordinary courts of law" (p. 232), the recognition of incorporeal property through the enforcement of mere promises, the development of intangible property through recognition of the negotiability of credit instruments and the value of good-will; and he analyzes the status of wage-bargains in the light of these developments.

This historical discussion is of importance because it emphasizes the evolutionary character of our fundamental legal doctrines. It tends to destroy the common notion of their "naturalness" or "sanctity." They emerged in response to public needs, and they may be modified or restricted, from time to time, in response to similar needs. There seems to be little in these chapters, however, calculated to transform the value theories of modern economics. These institutions and instruments but constitute the legal environment which is tacitly assumed, if not explicitly articulated, in most economic theorizing. This will appear, it is believed, from Professor Commons's own survey of his historical conclusions, which the reader will find at pages 313 and 314 of the volume.

It is difficult to traverse so vast and difficult and heterogeneous a field as that covered by Professor Commons without some inaccuracy of statement, misconception of doctrine, or undue sweep of generalization. In view of the general character of the present appraisal, no important purpose would be served by directing attention to specific differences of opinion in matters of legal or economic analysis. Law affords a fascinating field of inquiry; Professor Commons, as an economist, appears to have been unduly fascinated by it. An incisive study of judicial decisions is indispensable to a proper understanding of the character and direction of the numerous governmental policies developed in the past half century for the public control of industrial action. The extensive researches that led to the preparation of this volume will doubtless illuminate the further volume in contemplation by Professor Commons making practical applications of his principles to current problems. The concept of "economic

power" which he stresses so frequently and so suggestively may well serve to bring greater unity to economic reasoning in the field of public control. But it appears improbable that the realm of law will provide a basis for the radical reconstruction of economic theory. On the contrary, it is much more likely that the course of legal development will be effectively influenced by the labors of economists within their own domain. Law, by its very nature, tends to institutionalize the ideas of yesterday. In this country, with the individualistic conceptions of the eighteenth century incorporated in the supreme law of the land as constitutional limitations, and with the doctrine of separation of powers inhibiting a frank recognition of the "law-making" powers inherent in the judicial process, legalistic reasoning has frequently erected imposing obstacles to social and economic progress. Both on the bench and at the bar, eminent jurists, mindful of social progress and imbued with social vision, have not hesitated to note repeatedly this backwardness of the law. In the schools, Dean Roscoe Pound and his followers, through a long series of brilliant essays, have described the maladjustments and have traced their historical sources with distinguished scholarship and inspiring conviction. The immediate instruments for the socialization of the law will probably be found in its practitioners, and in those charged with its administration and interpretation; eventual relief will probably come from reforms in legal education rather than from political nostrums. But the pressure for change of outlook will emerge from the practical findings of psychology, and sociology, and economics. Economists will thereby render their theorizing more realistic, and they will help to marshal the facts and expound the principles from which may ultimately be evolved an identification of wealth and welfare.

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RECENT BOOKS ON MATHEMATICAL AND STATISTICAL METHOD

PROFESSOR BOWLEY states in his preface to *The Mathematical Groundwork of Economics:* [1] "I have attempted to reduce to a uniform notation, and to present as a properly related whole, the main part of the mathematical methods used by Cournot, Jevons, Pareto, Edgeworth, Marshall, Pigou, and Johnson, so far as these are applied to the fundamental equations of exchange and to the elementary study of taxation." In the seven chapters, covering 77 pages of the work, he appears to have accomplished this principal purpose very successfully. The analysis throughout is well planned and carefully executed, and there is a minimum of those mechanical obstacles which frequently impede the study of a text in applied mathematics. The mathematical work of these chapters is illustrated by occasional well-chosen diagrams, and through it all runs a thread of verbal interpretation designed to assist the reader in linking up the symbolic expressions and equations with familiar concepts and principles of economic theory. The reviewer hazards the suggestion that the average reader might have been helped considerably if such verbal interpretation had been used more extensively, particularly in the first five chapters. Certain it is that the reader following the steps of the mathematical analysis must often interpolate descriptive phrases from his general knowledge of economic theory if he is to have a continuous picture of the bearing of the mathematics upon the economics.

In an appendix, Professor Bowley presents a summary of mathematical ideas and formulae. He makes it clear in his preface that "though the simpler applications of mathematics made by competent writers and lecturers can be appreciated by any intelligent readers and students, the more

1. The Mathematical Groundwork of Economics, by A. L. Bowley. New York, Oxford University Press, American Branch, 1924. Pp. viii, 98. $2.35.

complicated analyses are only within the power of those who have mathematical aptitude, and it is for them that this book is arranged." In the appendix he indicates that he seeks merely "to refresh the memories" of readers who have already covered the essential ground in mathematical analysis. Those who have no familiarity with mathematical reasoning should not regard it as a sufficient introduction to the methods used in the text. One who, starting with entire ignorance of mathematical processes, undertakes to arrive at a comprehensive view by the study of this treatise alone, will be disappointed; the book is not designed for that purpose. It is intended rather as a comprehensive summary of mathematical methods actually used, constructed in such form that the reader who already understands mathematical operations and economic theory can secure in full a picture of the relation between the two.

It is probable that Professor Bowley's book will receive more attention in Great Britain than in America, for in his own country scholars in general do not have that reluctance to turn to mathematics which is so prevalent in America. In Great Britain an adequate knowledge of algebraic manipulation and infinitesimal analysis is more commonly a part of the equipment of the scholar than is the case on this side of the Atlantic. The situation in America is due partly to the failure of mathematicians themselves to remove from their subject that cloak of obscurity which has come down with it from the ages. A larger part of the blame probably belongs to the immaturity of our democratic system of education. Several generations of collegiate instruction have contributed to the all but permanent establishment of the doctrine that the topical content of a school and university curriculum is a collection rather than an organization, a succession rather than a sequence. There has developed, therefore, in the mind of teacher and pupil, a conviction that each individual subject can be and is an end in itself.

It is the contrary view of learning which furnishes the occasion for books such as that of Professor Bowley. The essential unity of all science is one of the supreme truths of

intellectual experience. Leaders in present-day science, in spite of the manifold "practical" applications of the scientific method, are nevertheless coming more and more to realize that no branch of science can advance far, independently of the others. It is the special rôle of the mathematician to promote the advancement of this doctrine and to ensure that the science of symbolic reasoning is made available for use in all branches of science.

The mathematical method has three chief uses in an application to a particular scientific theory. It is useful in that it furnishes another method of stating the steps in the argument and the conclusions; and, just as a restatement of the theory in different words, or even in a different language, serves to clarify and to instruct, so this particular use of symbolism may be fruitful in the study of such a theory as economics. A second service of mathematical analysis to any scientific doctrine is as a test of logical consistency. Mathematical method presupposes a consistent set of postulates and a consistent set of conclusions, and a scientific doctrine which cannot be stated in mathematical terms may well be lacking in the essentials of logical consistency. The third service is as a tool of research — an aid in discovering further truth. This last use of symbolic methods can be possible only for those who have so thoroughly mastered the methods themselves that they use them with facility. Professor Bowley's book and the works from which he quotes furnish evidences of all three uses of mathematical methods in economic reasoning.

It is likely that *The Mathematical Groundwork of Economics* will have a stronger appeal for mathematicians with a moderate knowledge of economics than for economists with a moderate knowledge of mathematics. The scholars of both groups who brave the rigors of the book will be rewarded by finding a unified statement in symbolic terms of a considerable portion of economic theory, and will be inspired by the realization that an implement forged by a Descartes and a Newton for the solution of problems of natural philosophy can be profitably applied to another field at the hands of a Jevons or a Marshall or a Bowley.

Jerome's *Statistical Method*[2] is a textbook designed particularly for the use of students of economics. It presents a fairly comprehensive treatment of the essential operations and principles involved in the collection, analysis, and presentation of the statistical data of economics and of business. The devices, tabular and graphic, for presenting statistical material are given careful and adequate attention. The basic methods of analyzing data — averages, ratios, dispersion, skewness — are explained at length. The discussion of the analysis of chronological data, including the construction and interpretation of index numbers, the measurement and elimination of secular trend and seasonal variation, and the preparation of business barometers, is commensurate with the prominence now given to such statistical problems in economics. Finally, the subject of correlation receives notice, followed by a reference to other sources for advanced methods. Chapters on the collection and sources of economic data, and appendices giving bibliographic references and illustrative tables, complete the text. To one who has grappled with the difficult problem of teaching statistical methods to students of economics the book will at once appeal as a highly successful attempt to promote such teaching.

Most of the exposition is above criticism, even by the statistical specialist. Altho the reviewer has made no attempt to verify in detail all of the algebraical formulae and the illustrative computations, he has found the book singularly free of errors which would be obstacles to the reader.

There are several minor points in the text with which he would venture to disagree, realizing, however, that they are in the main questions upon which a difference of opinion can fairly exist. The use of the term "index number" in the sense of a relative, altho common in official statistics and also in the literature of statistics, is to be regretted: the term had perhaps better be reserved for those summary numbers derived from several relatives or prices or other constituents. The statement, "Particularly when weights are

2. Statistical Method, by Harry Jerome. New York. Harper and Brothers, 1924. Pp. xxiv, 395.

used, additions to the list after the great staples are included have but slight effect on the index number," should be guarded by remarking that this is often valid only if short-time comparisons of price changes are to be made. The distinction between specific and normal seasonal variation (p. 235) will probably be confusing to the student who has not become familiar with the great variety of economic series, some of which exhibit what has come to be known as variable seasonal fluctuation. The use of seasonal base numbers (p. 243) is perhaps not as satisfactory a device for eliminating seasonal variation in most cases as the correction of relatives to trend, which is not explained in full in the text. The leading place given to a time series in developing the method of correlation is probably open to question on theoretical grounds, for there is danger that the student will fail to realize that correlation is essentially a device for analyzing multiple frequency series.

The author states in his preface: "If it appears that there is too scant attention to the underlying assumptions and reasoning upon which the validity of processes rests and too little reiteration of the dangers involved in the blind use of statistical methods, it is not because the writer minimizes the importance of these things, but because he believes that the beginner in statistical practice is deterred rather than enlightened by too much emphasis upon limitations. One must understand what a process is before he profits much from consideration of the limitations upon the usefulness of that process." Much is to be said for such a view, particularly in teaching an elementary course; yet it should not be overlooked that the methods of statistics are currently used by many writers without due regard for their limitations, and there is at least room for doubt whether anything more essential can be taught students of economic statistics than that statistical method has very serious limitations. If, indeed, it be unwise to emphasize at length such limitations in the preparation of a textbook, the teacher should nevertheless stress the restrictions which must be placed upon the use of statistical method.

The reviewer feels that Professor Jerome's text is the most satisfactory introductory book on economic statistics which has appeared in America. It is probable that the teacher who would use it in a half-year course will find it necessary to cut down at various points in order to complete the work. This is particularly true if the students are to be given any considerable practical work in the laboratory; and it is doubtful if any more advantageous use of instruction time can be made than in actually guiding students through the routine detail of computation. The book contains in its appendices material for laboratory problems; but the instructor who wishes to give his students, as an incident to their work, some experience with a wide variety of the data of economic statistics will need to supplement this material with figures drawn from other sources.

Seasonal Operation in the Construction Industries [3] is essentially a propaganda text, written for the purpose of exhibiting the extent of seasonal fluctuation in the building industries, revealing so far as possible the causes of fluctuation, and suggesting remedies designed to remove or minimize it. The occasion for a study of this sort arose from two primary considerations: first, in the reconstruction period following the World War the shortage of buildings in this country was so serious that it was desirable to bring about capacity operation of the industry throughout the year rather than at a particular season of the year; secondly, at a time when business in general was experiencing widespread depression, the unemployment occasioned by seasonal contraction in the operation of the building industry was an important cause of individual hardship among the workers, not only in the industry itself but in contributory industries also.

The book under review was prepared by a committee of the President's Conference on Unemployment, and is essentially an application of statistical method to the study of a

3. Seasonal Operation in the Construction Industries: the Facts and Remedies, by John M. Gries, James S. Taylor, and others. New York. McGraw-Hill Book Company, 1924. Pp. xxx, 213. $2.50.

specific economic problem. As such, it has some of the inevitable shortcomings attending the utilization of statistical method in its present stage of development. The particular statistical data essential to an exhaustive examination of the questions at issue were industriously assembled, so far as they were readily available or could be secured in the time at the disposal of the committee. The material, however, was necessarily inadequate for analysis by those highly refined statistical processes which have recently come into vogue, and which are nevertheless still largely the subject of controversy. Altho there can be little doubt, on the whole, that the main contentions of the book are amply confirmed by the data presented, the economist who is interested in the use of statistical analysis should not overlook certain important violations of sound statistical practice in some parts of this presentation. This remark applies especially to the statistical measurement of seasonal variation, which in some parts of the book is in the opinion of the reviewer faulty or inadequate. None the less, the book, because of the forceful way in which the data and conclusions are presented and the readable form of the verbal interpretation, will be used widely and will have an important part in securing a more effective year-round utilization of the capacity of the building industry.

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NOTES AND DISCUSSIONS

THE CONJUNCTURE INSTITUTE AT MOSCOW

In the year 1920 the Council of the Professors of the Agricultural Academy in Moscow (the foremost institution of this kind in Russia, equivalent to a graduate faculty of agricultural economics in universities of this country) decided to organize a special institute for the study of Economic Conjuncture. It is because agricultural economic conditions are of great importance in Russia that the Academy took the initiative in the organization of this Institute. The Director and the Assistant Director of the Institute were elected to office by the above-mentioned Council of Professors. The Institute was made responsible to the Academy with respect to scientific, administrative, and financial questions. It was purely a scientific organization, and had for its purposes: (1) the systematic collection of statistical data concerning Russian and partly concerning foreign economic conditions: the Institute did not intend to collect original statistical data, but had it in view to receive them from various statistical organizations and different publications; (2) the verification of these data; and (3) their economic analysis.

At the beginning, the Institute was but a very small organization, only five persons being engaged, three of whom were computers. But besides these, some graduate students of the Academy took part in the scientific research work conducted by the Institute.

Having such an organization and with the purpose above outlined, the Institute commenced its work in September 1920. It collected abundant and unique material about the movement of prices during the period of the Russian Revolution. At the same time, it constructed the first Russian indices of prices, and it also made a rich collection of the

data concerning agricultural and industrial production and the currency. Besides, the collaborators of the Institute carried on individual investigations, the results of which were the subject of collective discussions at the meetings of collaborators. The topics of these researches will be indicated below.

After the change in the economic policy at the beginning of 1921, — the reëstablishment of the market and the reorganization of industry in Russia, — the problem of economic conditions and their changes became of great importance. For this reason the researches of the Institute became of vital practical importance, since it had a considerable collection of systematic statistical data. Special interest was attached to its indices of prices. The Russian currency during that period being in a state of progressing inflation, it was very difficult to carry on all commercial transactions and to calculate in money terms. Hence it was necessary to recur to some standards for ascertaining the value of money and of comparing it at different times. The application of index numbers became one of the most popular methods for solving this question, and thus the indices of the Conjectural Institute received a practical application. Since that time the Institute, altho retaining its purely scientific character, has become connected with several governmental, industrial, and coöperative organizations. The closest connection was established with the Department of Agriculture and the Treasury Department. The Institute regularly submitted to these two organizations its figures and reports, receiving in return their financial help, and thus being enabled to continue and develop its scientific-research work.

In the spring of 1922 the Institute began publishing the *Monthly Economic Bulletin*, where it systematically published its statistical data on economic conditions in Russia and abroad, as well as articles giving a scientific analysis of these data. Practically all the most eminent Russian economists and statisticians, even tho not members of the Institute, contributed to the *Bulletin;* as for instance, Professors Manuiloff, Shaposhnikoff, Jeleznoff, Katzenelenbaum, Yurovsky,

Sokoloff, Groman, and Sointzeff, Mr. Wainstein, Mrs. Kovalskaya, Mr. Stern, Mr. Ignatieff, Mr. Oparin, Mr. Yakushkin and others. The Institute edited the materials for the *Bulletin*, and in the beginning its publisher was the Department of Agriculture.

With the further improvement of economic conditions in Russia, the problems of changes in the currency and prices became more important. Consequently the interest of the Treasury Department in the researches of the Institute became more apparent, and beginning with the middle of the year 1922, the Institute came in close contact with that Department. The Treasury Department offered to the Institute the possibility of enlarging to a considerable extent its scientific researches, in exchange for which the Institute was called upon to supply the Treasury Department with reliable data on economic conditions. The number of collaborators of the Institute increased to forty persons. The Institute, as before, remained a purely scientific organization with the same purpose — the study of economic conditions. There was a reorganization at the beginning of 1923, and in this reorganized state the Institute exists to the present time. The present writer is its Director. The Institute is now divided into several sections, as follows:

1. Section of prices, currency and finance.
2. Section of production, agricultural and industrial.
3. Section of economic conditions in foreign countries.
4. Section of publications.

The work of each section, as well as that of the Institute as a whole, is divided into two categories. First, work of a current character, such as the collection, verification, and analysis of current statistical data, as well as the construction of indices. As at the beginning of its work, the Institute receives the original statistical data mostly from other official statistical organizations. But on retail prices it collects independently the original data all over the country. It constructs two indices of retail prices, one for Moscow, the other for all Russia. At the present time indices for other groups of

economic phenomena are also constructed: for production, trade, currency, etc. The Institute also studies the problem of forecasting economic conditions. For this purpose it has built up a system of combined indices of the economic conditions in Russia. All current information about them is combined and analyzed. The results of this work are discussed collectively at the meetings of the members of the Institute, and thereafter are published regularly in the *Bulletin*.

Second, besides these studies of current data, the Institute carries on another kind of research work requiring a greater period of time. These are the researches of individual members, altho the results and the conclusions are also discussed collectively. Among the topics thus studied, or being studied at present, chiefly by members, are the following: World economic conditions during and after the War (by the author of the present note), published as the first of the publications of the Institute in 1922; the dynamics of prices of agricultural products from 1861 to the present time, to be published shortly; recent condition of the grain market in Russia, now in course of publication; methods of constructing an index of business conditions; methods of study of the industrial fluctuations in Russia; the dynamics of the Russian currency during the War and Revolution.

It is not difficult to note that between the work of the first and the second kind there exists a close connection. On the one hand the study of current economic conditions requires the study of the methods of the several economic problems. But the study of methods in its turn is possible only in connection with the working out of the problems and the analysis of vast statistical materials. The results of the study of current economic conditions are being published by the Institute, as heretofore, in the *Bulletin*, of which the publisher now is the Treasury Department. The results of the scientific work of the second category are being published by the Institute in the form of separate monographs.

The Institute corresponds, and exchanges its publications with, many similar scientific organizations abroad, and also

with several economic publications. Such relations have been established with the International Institute d'Agriculture in Rome, the Institute of the University of Kiel, the International Institute of Labor, and the German Statistical Bureau.

N. D. KONDRATIEFF.

MOSCOW, RUSSIA.

SOME FALLACIES IN THE INTERPRETATION OF SOCIAL COSTS

A REPLY

IN the August 1924 issue of this Journal Professor F. H. Knight attacks the validity of two articles of mine which had appeared in the numbers for February and November 1923. Professor Knight's criticisms are acute, but they do not seem to me to be conclusive, and it is perhaps worth while to carry the controversy a little further, in the hope that the whole situation may be made clearer.

Professor Knight links my argument with "the most important argument from the standpoint of general theory in Professor A. C. Pigou's monumental work on *The Economics of Welfare*," and condemns them both. I regard it as a compliment to be associated with Professor Pigou, even in error, but it is a compliment which I am convinced I do not deserve. The logic of Professor Knight's argument against Pigou, a logic which seems to me impregnable, turns on the assumption of free competition, including in that term mobility of labor. On this assumption, Professor Knight's contention that individual profit-seeking under private ownership will lead to maximum productivity, provokes only assent from me. But in Professor Knight's own words "the peculiarity of international trade as compared with domestic lies in the immobility of population viewed as labor power." [1]

1. Professor Knight seems to suppose that this is the only difference between the two types of trade, tho most economists list the immobility of capital as well. He does not dispose of the necessity of insisting on this second distinction by observing that "capital goods enter into inter-

It is this peculiarity which distinguishes Professor Pigou's argument from my own and gives validity to mine, even tho one concedes, as I do, that Professor Knight has made his point against Pigou. A further essential to my argument is the possibility of securing economies by the expansion within a given country of the total output of a given product. Professor Knight denies that there is any such possibility and supports his denial with the contention that internal economies are a function of the volume of output of the individual plant and not of the industry as a whole and that there are no such things as external economies at all. I am not greatly interested in the nomenclature — the significant point is that there *are* economies which can be obtained through an increased total volume of output, and which can be obtained in no other way. For instance, — to take one of the industries used in my original illustrations, watch-making, — if one of a number of competing steel mills specializes in cheap watch-cases, it is reasonable to suppose that it will be able to make them more cheaply if it can sell a larger output. Or to go to another industry, — oil-refining, let us say, — a very considerable decrease in unit cost of refined oil may result from the use of pipe lines, which would not be economically feasible if the output were smaller; and so on in any number of cases. If Professor Knight should object that these instances savor of monopoly, I submit that considerable economies may be realized on the transportation of materials to a localized industry of competing plants when the amount of such materials demanded shows a substantial increase. There are many other types of such economies, most of them turning on the increased specialization which a larger output makes economically feasible. Those cited, however will, I hope, be

national commerce in the same way as goods ready for consumption." This is true of capital goods, but it is not true of capital. If it were, the interest rate the world over would be the same for investments of like quality. Tho transportable capital goods sell at approximately the same price in all countries (disregarding duties and cost of transportation), they are used in combination with labor in very different proportions in different countries; and one strongly determining factor in these proportions is the differences in interest rates, that is to say, the differences in the price of capital.

sufficient to make my point, and if this point be conceded, it may be shown that freedom of trade between two countries may result in a net loss. To demonstrate that this is so, I shall assume conditions which I think will meet in every way the multifarious objections which Professor Knight raises. Let us suppose England and the United States each to be producing wheat and watches and that, before trade is opened up, these commodities exchange the one for the other on the following terms:

In England	*In United States*
40 units of wheat for 40 watches	40 units of wheat for 37 watches

Let us suppose in addition that England can expand its production of watches and contract its production of wheat without appreciable change in unit cost[2] (this simplifies matters, tho it is not essential to the argument, which would hold under varying costs as well),[3] but that in the United States the expansion of wheat production is attended by increasing unit cost while the contraction of watch-production will result in higher unit cost as well. Let us suppose, too, in

2. Professor Knight may define the term "cost" here in any one of the several senses which, he rightly points out, that term may have. It will not affect the validity of the argument. He objects that I do not anywhere give a clear definition of what I mean by cost. The first time I used the term in the articles criticized I stated that I meant by cost, cost in terms of effort. If I must be more explicit than this, I would say that in comparing effort-costs the significant thing seems to me to be the relative time necessarily expended by a given grade of labor working with equal intensity to secure units of the various products concerned. This I consider the significant thing when one wishes to measure prosperity rather than values.

3. All that will be assumed is that England will expand her production of watches and contract her production of wheat, and that the United States will reverse these conditions. It is not necessary that the total output of the two countries, taken together, should show any change. England may draw her raw materials for watch-making from the same sources that the United States had hitherto been using to make a like number of watches, and so there will be no tendency toward the decreasing returns which, I agree with Professor Knight, are eventually inevitable if total production is persistently expanded. On the other hand it is obvious that the United States cannot import the English land on which, before the trade, wheat had been grown.

order to meet a further objection of Professor Knight, that the United States obtains the best terms possible in its trade with England, namely, 40 units of wheat for 40 watches, that is to say, one unit of wheat for one watch. It is clear that under these conditions it will pay entrepreneurs in the United States to transfer labor and capital from watch-making to wheat-growing, so long as they can get more than 37 units of wheat for the labor and capital which is now devoted to procuring 37 watches. Suppose that by the transfer of labor and capital from watch-making to wheat-growing they can procure 37,500 units of wheat instead of 37,000 watches (that is, that the total production of wheat in the United States is augmented by 37,500 units through the transfer of the labor and capital which is now producing 37,000 watches). These 37,500 units of wheat will be exchangeable for 37,500 English watches. But the reduction in the output of watches in the United States raises the unit cost of watches (tho this is of course no concern of the wheat entrepreneur in bidding for labor and capital), so that only 36 watches are now obtainable for the same cost as were 37 before the transfer. The movement into wheat production will continue so long as more than 36 units of wheat can be obtained with the labor and capital which are necessary to produce 36 watches. Suppose that the total wheat supply is augmented by 36,200 units as a result of a transfer of labor and capital which diminishes the total output of watches by 36,000. These 36,200 units of wheat will exchange for 36,200 English watches. The result of the whole trade is thus to secure 37,500 plus 36,200 (that is, 73,700) watches, for the same effort as was originally producing 37,000 plus 37,000 (that is 74,000) watches — a loss of 300 watches, to say nothing of the diminished return to effort prevailing in the whole of the remaining American watch industry if that industry continues to struggle on. As Professor Knight intimates, it will probably succumb, but that will not improve matters, if wheat continues to be produced in the United States at increasing effort-cost. To offset the loss to the United States there is no compensating gain in England, where constant

cost conditions prevail (within the necessary limits) in both industries.

If there were complete mobility of labor and capital between England and the United States, this loss could not occur. Wheat- and watch-production would be carried on in the way which would issue in maximum return; but the lack of such mobility may not only prevent that happy result (this will happen over and over again when people stay in a sterile environment rather than migrate to a more productive one), but may even render a people less prosperous through international trade than without it.

Some of Professor Knight's statements not only are dubious, but are such as to permit of only one opinion and that not the one he expresses. Thus he says: "Assuming that wheat-growing is an industry of increasing and watch-making one of decreasing costs, it will come to pass, as the two countries progressively specialize, that the cost of both commodities is decreased for England and increased for America. It clearly follows, first, that if the process goes on long enough, America will begin to lose, and just as clearly from the assumptions of the article, that the process will go on forever! For the further it is carried, the greater becomes England's comparative advantage in the production of watches and the greater becomes America's comparative advantage in the production of wheat." Now this does not clearly follow at all. In fact, whether it is true or not depends on the relative strength of the factors making for increasing cost in the one industry and for decreasing cost in the other in each of the countries concerned.

Again he says that a "major fallacy" suffuses my argument, the "notorious law of reciprocal demand," which Professor Knight defines as "the law that the prices of commodities exchanged internationally are so adjusted that a country's exports pay for its imports." If one conceives of the law of reciprocal demand as Professor Knight does, it is, as he says, at best a truism. But I did not suppose that anyone now so conceives of it. A country's exports must obviously pay for its imports, but the reciprocal demand of the trading

parties will determine *how much* of a given export good must be given for a certain quantum of an import good. Professor Knight seems to be confusing the law of reciprocal demand as a determinant of exchange ratios with Mill's idea of the "equation of reciprocal demand" as the determining factor. If it is this latter idea at which he is tilting, he is wasting time in knocking over a man of straw.

In the second of the two articles which Professor Knight attacks, I noted the tendency of the exchange ratios to move toward one or the other of the possible extremes. The failure to do so in the first article is a defect which is justly to be criticized. But the defect, as I have tried to show in this reply, by no means renders the conclusions invalid. The entire argument of my second article falls to the ground, according to Professor Knight, as soon as the principles of cost are applied to the determination of international values instead of "assuming" the latter. As that article proceeds on the assumption of constant costs, and as the whole argument could be made without any reference to costs at all, but merely to selling prices, I cannot see what Professor Knight means. I hope that he will find occasion himself to make the application to the article of what he believes to be sound principles of cost rather than indict it with a magnificent but unconvincing gesture.

Finally, I do not agree that "the first and most general problem of economic theory is that of determining whether the fundamental tendencies of free contractual relations under competitive control lead to the maximum production of value as measured in price terms." Values are divisible into two main classes: (1) the value of human services and (2) the value of external objects. These two types of value are measured in terms of each other so that, as one set of values rises, the other falls. As I see it, the first and most general problem of economic theory is that of determining whether the fundamental tendencies of free contractual relations under competitive control lead to the maximum value for human services in terms of external objects or, what is the same thing, the minimum value of external objects in terms of human

services; for this can happen only as a result of maximum productivity. That way lies prosperity. That is why I am interested in effort-cost and judge of the virtues of a given situation, not by the values created, in the sense that Professor Knight uses values, namely, the values of external objects, but by the volume of desire-satisfying objects produced, which is a very different, nay almost an antithetical thing. That is why, too, it seems to me a matter of concern that a country may for a given effort outlay have a smaller output of physical commodities as a result of free enterprise motivated by profit-seeking. It seems to me indisputable, too, that a less amount of both wheat and watches for a given effort outlay is not as desirable as a greater amount of both of those commodities. If this is an example of the "fallacy of thinking in terms of physical efficiency, whereas efficiency is, in the nature of the case, a relation between value magnitudes," I prefer the fallacy to the pure gospel. With such a preference it is allowable, I submit, to average the higher effort-costs in the industry of increasing cost with the lower effort-costs in that industry, in order to determine the unit cost in terms of effort — not forgetting meanwhile that the trade is determined by entrepreneur's money costs.

Professor Knight has attacked at so many points that it would be a tactical error to attempt to defend them all. I shall merely add that, as regards his criticism of my use of the effects of different elasticities of demand for different goods, I cannot see why the rates of interchange of goods between two countries, one producing manufacturing goods and the other agricultural products, should not shift as a result of shifts in the amount and intensity of demand for those respective goods, either in the two countries concerned or in the world at large.

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ON DECREASING COST AND COMPARATIVE COST

A Rejoinder

Controversies often show a disappointing tendency to get away from the main issue. In the present case, my main point of attack was on the theory of cost and its variation in relation to output, to which Professor Graham makes only a brief reference. If one can make his assumptions in regard to decreasing cost, his conclusion is correct. On the same assumptions, Professor Pigou's argument in the *Economics of Welfare* would also be sound, as Professor Pigou himself has admitted that it is not. Professor Graham is surely in error in bringing forward the international immobility of labor as differentiating his position from that of Professor Pigou. *The production of wheat* [in America] *to be exchanged for watches* [in England], *at any ratio, is simply the production of watches by a different method* — in his example, by a method involving increasing instead of decreasing cost. That private enterprise tends to direct productive power into industries of increasing cost where greater product might be obtained in industries of decreasing (or constant) cost is exactly Professor Pigou's argument with which I bracketed that of Professor Graham in my criticism.

I shall not try to repeat in detail the argument of my former paper, which was there stated with the utmost brevity. What Professor Graham has to do to establish his theoretical position is to show that in a significant proportion of cases industry really operates under decreasing cost, *without tending toward monopoly*, the case of monopoly being expressly excepted. If the withdrawal of some producers of watches from that industry can normally increase the real, social costs of producing watches to the producers who remain in the business,

his argument is sound, and so is that of Professor Pigou. To vindicate decreasing costs in the sense required, it must be shown that there are, or may be, industries, in a condition of stable competition, in which no producer already engaged could decrease his real costs by expanding his output at the expense of other producers, and yet in which real costs would be decreased all around by new producers entering the industry in competition with those already there. Now, the one thing certain is that the new producers must bid up the prices of cost goods, more or less, to draw them away from competing industries. In addition, they will usually force recourse to productive agencies of lower quality than those previously employed, more or less, and will also bring about the use of the more freely transferable agencies in less advantageous proportions with those that cannot be so freely replenished at the expense of other industries.

These inevitable sources of increasing cost must be more than offset by some kind of purely "external" economies in organization. In spite of the weight of authority which may be cited for such economies, I have never succeeded in picturing them in my mind, or finding any convincing reason to believe they exist; and the hypothetical examples cited by Professor Graham in his reply have not assisted me in doing so. They all very much more than "savor" of monopoly, the last one cited, in connection with transportation, no less than the others. I can imagine conditions in which the production of a good may be tied up with a monopolistic industry like transportation, operating below capacity, in such a way as to produce some tendency in the direction argued. But I cannot believe such conditions general enough to justify a special law in economic theory, or a special provision in tariff legislation. And when all is said, the transportation or other service in question would be a part of the process of producing the commodity, and hence internal to the industry when defined in the only correct way, in technological terms. I cannot prove the universal negative proposition that a certain state of affairs can never happen; I can only submit that the positive arguments for increasing cost place a definite *onus probandi*

on anyone who advocates the contrary principle. Until a plausible example is brought forward, the category of decreasing cost under stable competition remains an "empty economic box."

Moreover, even assuming the theory of decreasing costs established, the argument for protection does not follow. There is no reason why the law should not operate in England as well as America. And, as pointed out in my former paper, if effective competition prevails in the watch-making industry in England, America would get the same effect of the economies involved by importing the watches as by producing them in America.

Professor Graham is right in pointing out (page 328) that comparative advantage will not *necessarily* increase with international specialization, in view of the fact of increasing *versus* decreasing cost alone. My language was misleading; what I had in mind was the particular figures in Professor Graham's illustration. In other cases the differences between us are also more or less a matter of the use of words, and I will not take up space and distract attention from the main issue by arguing them. Certainly I could not expect in a sentence or two to make it clearer now than I did in my former paper, that "the first and most general problem of economic theory" is whether competition tends to maximize product; that *in the large* costs are to be left out of account, since any real cost is to be regarded as the sacrifice of an alternative "product" (tho this need not be marketable).

I would add only that, if my view of the issues is correct, Professor Graham has rendered a signal service to economics. His position is correctly reasoned from economic principles taught in many of the best textbooks. The normal method by which a deductive science makes progress is through the discovery that accepted premises lead to conclusions which are demonstrably wrong.

FRANK H. KNIGHT.

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BOOKS RECEIVED

Abbati, H. The Unclaimed Wealth. How Money Stops Production. New York: Macmillan Co. 1924. pp. 190.

American Engineering Council. Industrial Coal, Purchase, Delivery and Storage. New York: Ronald Press. 1924. pp. 419. $5.00.

Baker, Crothers, and others. Problems of Citizenship. New York: Henry Holt & Co. 1924. pp. 514. $2.75.

Bha'tnagar, Brijgopal. Currency and Exchange in India. Allahabad: Ram Narain Lal. 1924. pp. 139. Rs. 2.

Bonar, James. Malthus and His Work. New York: Macmillan Co. 1924. pp. 438. $4.50. (Revised edition of the well-known book published in 1885.)

Bouglé, C. Le Solidarisme. Paris: Marcel Giard. 1924. pp. 204. 8 *fr.* (Second edition.)

Bourgin, Herbert. L'Industrie et le Marché, Essai sur les lois du développement industriel. Paris: Félix Alcan. 1924. pp. 115. 8 *fr.*

Bye, Raymond T. Principles of Economics. New York: Alfred A. Knopf. 1924. pp. 508.

Carver, Thomas Nixon. The Economy of Human Energy. New York: Macmillan Co. 1924. pp. 287. $2.50. (In the Citizen's Library of Economics, Politics, and Sociology.)

Ferris, Elmer E., and Collins, G. Rowland. Salesmanship. New York: Ronald Press Co. 1924. pp. 414. $3.00.

Fox, Paul. The Reformation in Poland. Some Social and Economic Aspects. Baltimore: Johns Hopkins Press. 1924. pp. 153. (Johns Hopkins University Studies.)

Ghosh, J. A Study of English Theories of Rent. Calcutta: Kar, Majumdar & Co. 1924. pp. 281.

——A History of Land Tenure in England. Calcutta: Kar, Majumder & Co. 1924. pp. 380. (Second revised edition.)

Giddings, Franklin H. The Scientific Study of Human Society. Chapel Hill, N. C.: University of North Carolina Press. 1924. pp. 247. $2.00.

Gulick, Charles A. Labor Policy of the United States Steel Corporation. New York: Longmans, Green & Co. 1924. pp. 200. (Columbia University Studies.)

Harrison, Shelby M., and others. Public Employment Offices. Their Purpose, Structure and Methods. New York: Russell Sage Foundation. 1924. pp. 685. $3.50.

Hibbard, Benjamin Horace. A History of the Public Land Policies of the United States. New York: Macmillan Co. 1924. pp. 591. $4.50.

Institute for Government Research Service Monographs. The Federal Farm Loan Bureau, by W. S. Holt. Baltimore: Johns Hopkins Press. 1924. pp. 160. $1.00.

Kantor, J. R. Principles of Psychology. New York: Alfred A. Knopf. 1924. pp. 473.

Kern, Robert R. The Supercity. A Planned Physical Equipment for City Life. New York: Vail-Ballou Press. 1924. pp. 349.

Knapp, Georg Friedrich. The State Theory of Money. London: Macmillan & Co., Ltd. 1924. pp. 306. 10 *s* 6 *d.* (Abridged edition, translated by H. M. Lucas and J. Bonar.)

Kock, M. H. de. Selected Subjects in the Economic History of South Africa. Capetown: Juta & Co. (American Agents, E. Steiger & Co., New York City). 1924. pp. 475. 15 *s.*

Laum, Bernhard. Heiliges Geld. Eine Historische Untersuchung über den Sakralen Ursprung des Geldes. Tübingen: J. C. B. Mohr. 1924. pp. 164.

MacLeod, William C. The Origin of the State, reconsidered in the Light of the data of aboriginal North America. Philadelphia. 1924. pp. 109.

Masse, René. La Production des Richesses. Paris: Marcel Giard. 1925. pp. 979. 50 *fr.*

Mill, John Stuart. Autobiography with an appendix and preface by Harold J. Laski. New York: Oxford University Press American Branch. 1924. pp. 343. 80 cents.

Mills, Frederick Cecil. Statistical Methods applied to Economics and Business. New York: Henry Holt & Co. 1924. pp. 604. $3.60.

Paton, W. A. Accounting. New York: Macmillan Co. 1924. pp. 894.

Rice, Stuart A. Farmers and Workers in American Politics. New York: Longmans, Green & Co. 1924. pp. 231. (Columbia University Studies.)

Richardson, Dorsey. Constitutional Doctrines of Justice Oliver Wendell Holmes. Baltimore: Johns Hopkins Press. 1924. pp. 103. (Johns Hopkins University Studies.)

Rignano, Eugenio. The Social Significance of the Inheritance Tax. New York: Alfred A. Knopf. 1924. pp. 128. (Translated by William J. Shultz.)

Rukeyser, Merryle S. The Common Sense of Money and Investments. New York: Simon & Schuster. 1924. pp. 333.

Ryan, Franklin Winton. Usury and Usury Laws. Boston: Houghton, Mifflin Co. 1924. pp. 249. $2.50 (Hart, Schaffner and Marx Prize Essays in Economics.)

Sanford, Hugh W. The Business of Life. New York: Oxford University Press American Branch. 1924. pp. 959. $10.00.

Shah, N. J. History of Indian Tariffs. London: W. Thacker & Co. 1924. pp. 433. 12 *s* 6*d.*

Shippee, Lester Burrell. Recent American History. New York: Macmillan Co. 1924. pp. 554.

Stamp, Josiah. Studies in Current Problems in Finance and Government. London: P. S. King & Son. 1924. pp. 342. 10 *s* 6 *d.*

Stockder, Archibald H. German Trade Associations: The Coal Kartels. New York: Henry Holt & Co. 1924. pp. 254. $4.00.

Subercaseaux Guillermo. Historia de las Doctrinas Económicas en América y en Especial en Chile. Santiago de Chile: Soc. Imp. y Li Universo Agustinas. 1924. pp. 143.

Valgren, Victor N. Farmer's Mutual Fire Insurance in the United States. Chicago: University of Chicago Press. 1924. pp. 186. $1.90.

Wallace, Schuyler C. Our Governmental Machine. New York: Alfred A. Knopf. 1924. pp. 223.

Warren, G. F., and Pearson, F. A. The Agricultural Situation. Economic Effects of Fluctuating Prices. New York: John Wiley & Sons, Inc. 1924. pp. 299. $3.00.

Zeuceanu, A. La Liquidation de la Banque d'Autriche-Hougrie. Vienne. 1924. pp. 750.

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